

**Getting Started**



# **CUBASE AI<sub>5</sub>**

Integrated Music Production System





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**Introduction**



# Welcome

Congratulations and thank you for your purchase of Steinberg Cubase AI. 2009 marks the 25th anniversary of Steinberg Media Technologies GmbH and our key message “Creativity First” has never had more meaning than today. Over many years and many product generations Cubase has grown from a classic MIDI sequencer to possibly the most powerful music production software money can buy. And as a Cubase AI user, you have now become a member of the largest community of music software users on the planet!

With Cubase AI you have chosen a music production system which will take you from the very first idea to the final mix. Whether you're a keyboard player, a songwriter, an instrumentalist or a mixing engineer – Cubase AI has it all covered and gives you the tools you need to record, edit, mix and master your music. The introduction of industry standards like VST and ASIO are good examples for how Steinberg technology has always driven music technology and paved ways for others to follow.

Designed by the software engineers at Steinberg and the hardware experts at Yamaha, Steinberg Advanced Integration hardware is the ideal choice for you as a valued Cubase AI customer. Full plug&play connectivity and True Integrated Monitoring™ are only two of the many advantages that come with hardware and software that have been made for each other.

Don't forget to register at MySteinberg and get access to online support offers and additional exclusive services. We also welcome you to the Cubase community at our online forum [cubase.net](http://cubase.net).

See you around! Your Steinberg Cubase AI Team

## About the manuals and the help

The Cubase AI documentation is divided into several sections, as listed below. Some of the documents are in Adobe Acrobat format (extension “.pdf”) – these can be accessed in the following ways:

- You can open the pdf documents from the Documentation submenu on the Help menu in the program.
- Under Windows you can also open these documents from the Cubase AI Documentation subfolder on the Start menu.

- Under Mac OS X the pdf documents are located in the folder “/Library/Documentation/Steinberg/Cubase AI 5”.

⇒ To read the pdf documents, you need to have a suitable pdf reader application installed on your computer. An installer for Adobe Reader is provided on the program DVD.

## The Getting Started manual

This is the manual you are reading now. It covers the following areas:

- Computer requirements.
- Installation issues.
- Setting up your system for audio, MIDI and/or video work.
- Tutorials describing the most common procedures for recording, playing back, mixing and editing in Cubase AI.

In other words, this manual does not go into detail on any Cubase AI windows, functions or procedures.

## The Operation Manual

The Operation Manual is the main Cubase AI reference documentation, with detailed descriptions of Cubase AI operations, parameters, functions and techniques. You should be familiar with the concepts and methods described in the Getting Started manual before moving on to the Operation Manual.

## Plug-in Reference

This manual describes the features and parameters of the included VST plug-ins, realtime audio effects and the VST Instrument HALionOne.

## Remote Control Devices

This pdf document lists the supported MIDI remote control devices.

## Menu Reference

This pdf document provides a list of all menus and their options with a brief description, for quick reference.

## The dialog help

To get information about the active dialog, click its Help button.



## About the program versions

The documentation covers two different operating systems or “platforms”; Windows and Mac OS X.

Some features and settings are specific to one of the platforms, Windows or Mac OS X. This is clearly stated in the applicable cases. In other words:

⇒ If nothing else is said, all descriptions and procedures in the documentation are valid for both Windows and Mac OS X.

The screenshots are taken from the Windows version.

## Key command conventions

Many of the default key commands in Cubase AI use modifier keys, some of which are different depending on the operating system. For example, the default key command for Undo is [Ctrl]-[Z] under Windows and [Command]-[Z] under Mac OS X.

When key commands with modifier keys are described in this manual, they are shown with the Windows modifier key first, in the following way:

[Win modifier key]/[Mac modifier key]-[key]

For example, [Ctrl]/[Command]-[Z] means “press [Ctrl] under Windows or [Command] under Mac OS X, then press [Z]”. Similarly, [Alt]/[Option]-[X] means “press [Alt] under Windows or [Option] under Mac OS X, then press [X]”.

⇒ Please note that this manual often refers to “right-clicking”, e.g. to open context menus. If you are using a Macintosh computer with a single-button mouse, hold down [Ctrl] and click.

## How you can reach us

On the Help menu in Cubase AI you will find items for getting additional information and help:

- On the “Steinberg on the Web” submenu, you can find links to various Steinberg web sites. Selecting one will automatically launch your browser application and open the page.

You can find support and compatibility information, answers to frequently asked questions, links for downloading new drivers, etc. This requires that you have a web browser application installed on your computer, and a working Internet connection.



**System requirements and installation**



## About this chapter

This chapter describes the requirements and installation procedures for the Windows version and the Mac version of Cubase AI.

## Minimum requirements

To use Cubase AI, your computer must meet the following minimum requirements:

### Windows

- Windows XP (Home or Professional, Service Pack 2), or Windows Vista (32-bit – see below)
- 2 GHz processor (Dual Core processor recommended)
- 1024MB RAM
- Windows DirectX compatible audio hardware; ASIO compatible audio hardware recommended for low latency performance.
- Display resolution of 1280x800 pixels recommended
- 4GB of free hard disk space
- DVD ROM drive with dual layer support required for installation
- Internet connection required for license activation and registration

### Macintosh

- Mac OS X 10.5.5
- PowerPC G5 (Intel Core Duo processor recommended)
- 1024MB RAM
- CoreAudio compatible audio hardware
- Display resolution of 1280x800 pixels
- 4GB of free hard disk space
- DVD ROM drive with dual layer support required for installation
- Internet connection required for license activation and registration

## General notes on how to set up your system

⚠ On the Steinberg web site, under “Support–DAW Components”, you can find detailed information on what to consider when setting up a computer system dedicated to audio work.

- **RAM** – There is a direct relation between the amount of available RAM and the number of audio channels that you can have running.

The amount of RAM specified above is the minimum requirement, but as a general rule “the more the better” applies.

- **Hard disk size** – The size of the hard disk determines how many minutes of audio you will be able to record. Recording one minute of stereo CD quality audio requires 10 MB of hard disk space. That is, eight stereo tracks in Cubase AI use up at least 80 MB of disk space per recording minute.

- **Hard disk speed** – The speed of the hard drive also determines the number of audio tracks you can run. That is the quantity of information that the disk can read, usually expressed as “sustained transfer rate”. Again, “the more the better” applies.

- **Wheel mouse** – Although a mouse without a wheel will work fine with Cubase AI, we recommend that you use a wheel mouse. This will speed up value editing and scrolling considerably.

## MIDI requirements

If you intend to use the MIDI features of Cubase AI, you need the following:

- A MIDI interface to connect external MIDI equipment to your computer.
- A MIDI instrument.
- Any audio equipment required to listen to the sound from your MIDI devices.



## Audio hardware

Cubase AI will run with audio hardware that meets the following specifications:

- Stereo.
- 16 bit.
- Support of at least the 44.1kHz sampling rate.
- Windows – The audio hardware must be supplied with a special ASIO driver, or a DirectX compatible driver, see below.
- Windows Vista only – If there is no dedicated ASIO driver available, you can also use the Generic Low Latency ASIO Driver.
- Mac – The audio hardware must be supplied with Mac OS X-compatible drivers (CoreAudio or ASIO).

### Using the built-in audio hardware of the Macintosh (Mac only)

As of this writing, all current Macintosh models provide at least built-in 16 bit stereo audio hardware. For detailed information, refer to the documentation describing your computer.

Depending on your preferences and requirements, using the built-in audio hardware may be sufficient for use with Cubase AI. It is always available for selection in Cubase AI – you don't need to install any additional drivers.

## About drivers

A driver is a piece of software that allows a program to communicate with a certain piece of hardware. In this case, the driver allows Cubase AI to use the audio hardware. For audio hardware, there are two different cases, requiring different driver configurations:

### If the audio hardware has a specific ASIO driver

Professional audio cards often come with an ASIO driver written especially for the card. This allows for communication directly between Cubase AI and the audio card. As a result, audio cards with specific ASIO drivers can provide lower latency (input-output delay), which is crucial when monitoring audio via Cubase AI or using VST instruments. The ASIO driver may also provide special support for routing, synchronization, etc.

Audio card-specific ASIO drivers are provided by the card manufacturers. Make sure to check the manufacturer's web site for the latest driver versions.



If your audio hardware comes with a specific ASIO driver we strongly recommend that you use this.

### If the audio card communicates via the Generic Low Latency ASIO driver (Windows Vista only)

If you are working with Windows Vista, you can use the Generic Low Latency ASIO driver. This is a generic ASIO driver that provides ASIO support for all audio cards supported by Windows Vista, thus allowing for low latency. The Generic Low Latency ASIO driver provides the Windows Vista Core Audio technology in Cubase AI. No additional driver is needed.

⇒ Though the Generic Low Latency ASIO driver provides low latency for all audio cards, you might get better results with on-board audio cards than with external USB audio devices.

### If the audio card communicates via DirectX (Windows only)

DirectX is a Microsoft "package" for handling various types of multimedia data under Windows. Cubase AI supports DirectX, or to be more precise, DirectSound, which is a part of DirectX used for playing back and recording audio. This requires two types of drivers:

- A DirectX driver for the audio card, allowing it to communicate with DirectX. If the audio card supports DirectX, this driver should be supplied by the audio card manufacturer. If it isn't installed with the audio card, please check the manufacturer's web site for more information.
- The ASIO DirectX Full Duplex driver, allowing Cubase AI to communicate with DirectX. This driver is included with Cubase AI, and does not require any special installation.



# Hardware installation

## Installing the audio hardware and its driver

1. Install the audio card and related equipment in the computer, as described in the card's documentation.

2. Install the driver for the card.

Depending on the operating system of your computer, there are different types of drivers that could apply: card-specific ASIO drivers, the Generic Low Latency ASIO Driver (Windows Vista only), DirectX drivers (Windows) or Mac OS X (Mac) drivers.

### Specific ASIO drivers

If your audio card has a specific ASIO driver, it may be included with the audio card, but you should always make sure to check the audio card manufacturer's web site for the most recent drivers. For details on how to install the driver, refer to the manufacturer's instructions.

### Generic Low Latency ASIO Driver (Windows Vista only)

On Windows Vista systems, you can also use the Generic Low Latency ASIO Driver if there is no specific ASIO driver available. This driver is included with Cubase AI and does not require any special installation.

### DirectX drivers (Windows only)

If your audio card is DirectX compatible, its DirectX drivers will most likely be installed when you install the card. If you have downloaded special DirectX drivers for the audio card, you should follow the manufacturer's installation instructions.

### Mac OS X drivers (Mac only)

If you are using a Macintosh computer, make sure you are using the latest Mac OS X drivers for your audio hardware. Follow the manufacturer's instructions to install the driver.

### Testing the card

To make sure the audio card will work as expected, perform the following two tests:

- Use any software included with the audio card to make sure you can record and play back audio without problems.
- If the card is accessed via a standard operating system driver, try playing back audio using the computer's standard audio application (e.g. Windows Media Player or Apple iTunes).

## Installing a MIDI interface/synthesizer card

Installation instructions for a MIDI interface should be included with the product. However, here's an outline of the necessary steps:

1. Install the interface (or MIDI synthesizer card) inside your computer or connect it to a "port" (connector) on the computer.

Which is right for you depends on which type of interface you have.

2. If the interface has a power supply and/or a power switch, turn it on.

3. Install the driver for the interface, as described in the documentation that comes with the interface.

You should also make sure to check the manufacturer's web site for the latest driver updates.

## Installing Cubase AI

The installation procedure puts all files in the right places, automatically.

Depending on your system, the Cubase AI 5 Start Center program on the DVD may start automatically. If no interactive start screen appears, open the DVD and double-click the file "Cubase AI 5 Start Center" to launch the interactive start screen. From there you can start the installation of Cubase AI and browse through the additional options and information presented there.

In case you don't want to install Cubase AI via the interactive start screen, follow the procedure below:

### Windows

1. Double-click the file called Setup.exe.
2. Follow the instructions on screen.

### Macintosh

1. Double-click the file called "Cubase AI 5.mpkg".
2. Follow the instructions on screen.



## About the tutorials


The program DVD also contains several tutorial project files and videos. These are not installed during the installation, but can be added manually from the DVD.

The tutorial chapters in this manual all refer to these tutorial projects. So, to be able to follow the instructions in this manual, you have to drag the files to your computer.

You will find the tutorial projects in the folder “Additional Content”.

## Defragmenting the hard disk (Windows only)

If you plan to record audio on a hard disk where you have already stored other files, now is the time to defragment it. Defragmentation reorganizes the physical allocation of space on the hard disk in order to optimize its performance. It is done with a special defragmentation program.

 It is crucial to the audio recording performance that your hard disk is optimized (defragmented). You should make sure to defragment regularly.

## License activation and registration

Cubase AI uses a software-based copy protection scheme. The so-called Soft-eLicenser is installed automatically with your version of Cubase AI and allows you to use the program out-of-the-box for 300 program starts. After this period, you will have to register your program and activate your license, otherwise, Cubase AI will not run anymore.

Proceed as follows:

1. Open the Syncrosoft License Control Center (which can be found in the Start menu on Windows systems or in the Applications folder on a Mac).
2. Write down the number of the eLicenser for Cubase AI displayed in the Syncrosoft License Control Center.
3. Launch Cubase AI and select the Registration option from the Help menu.  
The “My Steinberg” section on the Steinberg web site is opened.

4. Follow the instructions on the web site to create a user account.

You will receive an e-mail asking you to confirm the creation of your account in order to activate it. Just click on the confirmation link in the e-mail. After the confirmation, you will be able to log in to the Steinberg customer area.

5. Go back to “My Steinberg” on the Steinberg web site, log in to your account and enter the number of the eLicenser for Cubase AI.

You will receive an e-mail with the activation code for Cubase AI.

6. In the Syncrosoft License Control Center open the Wizards menu and select the “License Download” option. Follow the instructions and enter your Cubase AI activation code.

7. Congratulations! You have successfully licensed and registered your program and are now entitled to technical support and kept aware of updates and other news regarding Cubase AI.



# 3

## Setting up your system



## Setting up audio

⚠ Make sure that all equipment is turned off before making any connections!

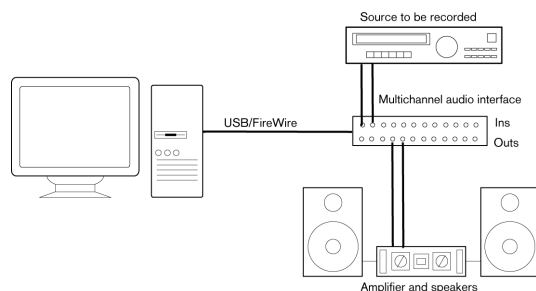
### Connecting audio

Exactly how to set up your system depends on many different factors, e.g. the kind of project you wish to create, the external equipment you want to use, or the computer hardware available to you. Therefore, the following sections can only serve as examples.

How you connect your equipment, i.e. whether you use digital or analog connections, also depends on your individual setup.

### Stereo input and output – the simplest connection

If you only use a stereo input and output from Cubase AI, you can connect your audio hardware, e.g. the inputs of your audio card or your audio interface, directly to the input source and the outputs to a power amplifier and speaker.



A simple stereo audio setup

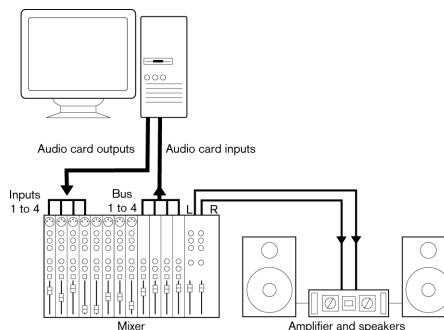
This is probably the simplest of all setups – once you have set up the internal input and output busses, you can connect your audio source, e.g. a microphone, to your audio interface and start recording.

### Multi-channel input and output

Most likely however, you will have other audio equipment that you want to integrate with Cubase AI, using several input and output channels. Depending on the equipment available to you, there are two ways to go: either mixing using an external mixing desk, or mixing using the mixer inside Cubase AI.

- External mixing means having a hardware mixing device with a group or bus system that can be used for feeding inputs on your audio hardware.

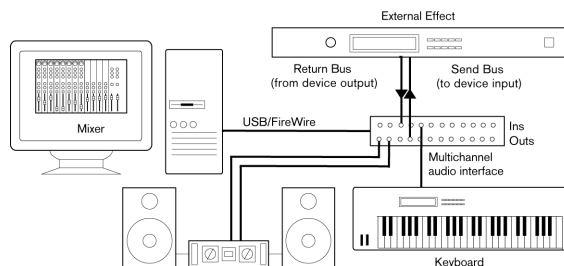
In the example below, four busses are used for feeding signals to the audio hardware's inputs. The four outputs are connected back to the mixer for monitoring and playback. Remaining mixer inputs can be used for connecting audio sources like microphones, instruments, etc.



A multi-channel audio setup using an external mixer

⇒ When connecting an input source (like a mixer) to the audio hardware, you should use output busses, sends or similar that are separate from the mixer's master output to avoid recording what you are playing back. You may also have mixing hardware that can be connected via FireWire.

- When using the Mixer inside Cubase AI, you can use the inputs on your audio hardware to connect microphones and/or external devices. Use the outputs to connect your monitoring equipment.



Mixing inside Cubase AI




## Recording from a CD player

Most computers come with a CD-ROM drive that can also be used as a regular CD player. In some cases the CD player is internally connected to the audio hardware so that you can record the output of the CD player directly into Cubase AI (consult the audio hardware documentation if you are uncertain).

- All routing and level adjustments for recording from a CD (if available) are done in the audio hardware setup application (see below).

## Word Clock connections


If you are using a digital audio connection, you may also need a word clock connection between the audio hardware and external devices. Please refer to the documentation that came with the audio hardware for details.

 It is very important that word clock synchronization is done correctly or there might be clicks and crackles in recordings that you make!

## About recording levels and inputs

When you connect your equipment, you should make sure that the impedance and levels of the audio sources and inputs are matched. Typically, different inputs may be designed for use with microphones, consumer line level (-10dBV) or professional line level (+4dBV), or you may be able to adjust input characteristics on the audio interface or in its control panel. Please check the audio hardware documentation for details.

Using the correct types of input is important to avoid distortion or noisy recordings.

 Cubase AI does not provide any input level adjustments for the signals coming in to your audio hardware, since these are handled differently for each card. Adjusting input levels is either done in a special application included with the hardware or from its control panel (see below).

## Making settings for the audio hardware

Most audio cards come with one or more small applications that allow you to configure the inputs of the hardware to your liking. This includes:


- Selecting which inputs/outputs are active.
- Setting up word clock synchronization (if available).
- Turning monitoring via the hardware on/off (see ["About monitoring"](#) on [page 18](#)).
- Setting levels for each input. This is very important!
- Setting levels for the outputs, so that they match the equipment you use for monitoring.
- Selecting digital input and output formats.
- Making settings for the audio buffers.

In many cases all available settings for the audio hardware are gathered in a control panel, which can be opened from within Cubase AI as described below (or opened separately, when Cubase AI isn't running). In some cases, there may be several different applications and panels – please refer to the audio hardware documentation for details.

## Plug and Play support for ASIO devices

The Steinberg MR816 hardware series supports Plug and Play in Cubase AI. These devices can be plugged in and switched on while the application is running. Cubase AI will automatically use the driver of the MR816 series and will re-map the VST connections accordingly.

- Please note that Steinberg cannot guarantee that this will work with other hardware. If you are unsure of whether your device supports plug and play, please consult its documentation.

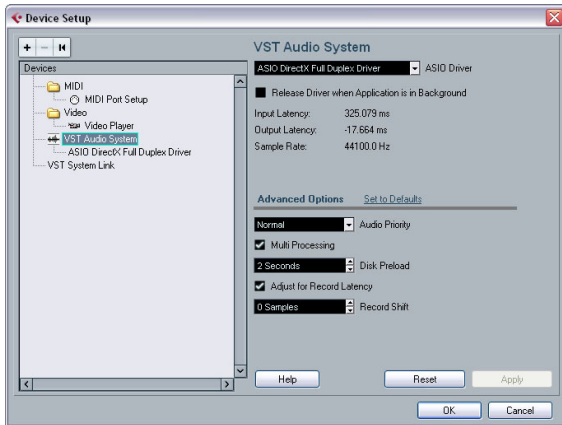
 If a device that does not support Plug and Play is connected/disconnected while the computer is running, it may get damaged.



## Selecting a driver and making audio settings in Cubase AI

The first thing you need to do is select the correct driver in Cubase AI to make sure that the program can communicate with the audio hardware:

1. Launch Cubase AI, select Device Setup from the Devices menu and click on VST Audio System in the Devices list to the left.



The VST Audio System page in the Device Setup dialog

2. Select your audio hardware driver from the ASIO Driver menu.

There may be several options here that all refer to the same audio hardware. When you have selected a driver, it is added to the Devices list.

⚠ Under Windows, we strongly recommend that you access your hardware via an ASIO driver written specifically for the hardware, if available. If no ASIO driver is installed, we recommend that you check with your audio hardware manufacturer if they have an ASIO driver available, for example for download via the Internet.

⚠ On Windows Vista systems, you can also use the Generic Low Latency ASIO driver if no specific ASIO driver is available.

3. Select the driver in the Devices list to open the driver settings for your audio hardware.
4. Bring up the control panel for the audio hardware and adjust the settings as recommended by the audio hardware manufacturer.

- Under Windows, you open the control panel by clicking the Control Panel button.

The control panel that appears when you click this button is provided by the audio hardware manufacturer – not Cubase AI (unless you use DirectX, see below). Hence it will be different for each audio card brand and model.

The control panels for the ASIO DirectX driver and the Generic Low Latency ASIO Driver (Windows Vista only) are exceptions, in that they are provided by Steinberg and described in the dialog help, opened by clicking the Help button in the dialog. See also the notes on DirectX below.

- Under Mac OS X, the control panel for your audio hardware is opened by clicking the “Open Config App” button on the settings page for your audio device in the Device Setup dialog.

Note that this button is available only for some hardware products. If “Open Config App” is not available in your setup, refer to the documentation that came with your audio hardware for information on where to make hardware settings.

5. If you plan to use several audio applications simultaneously, you may want to activate the option “Release Driver when Application is in Background” on the VST Audio System page. This will allow another application to play back via your audio hardware even though Cubase AI is running.


The application that is currently active (i.e. the “top window” on the desktop) will get access to the audio hardware. Make sure that any other audio application accessing the audio hardware is also set to release the ASIO (or Mac OS X) driver so Cubase AI can use it when it becomes the active application again.

6. If your audio hardware and its driver support ASIO Direct Monitoring, you may want to activate the Direct Monitoring checkbox on the page for the driver. Read more about monitoring later in this chapter and in the chapter “Recording” in the Operation Manual.

7. Click Apply and then OK to close the dialog.



### If you are using audio hardware with a DirectX driver (Windows only)

 If your audio hardware does not have a specific ASIO driver and your Windows version does not support the Generic Low Latency ASIO driver, a DirectX driver is the next best option.

Cubase AI comes with a driver called ASIO DirectX Full Duplex, available for selection on the ASIO Driver pop-up menu (VST Audio System page).

⇒ To be able to take full advantage of DirectX Full Duplex, the audio hardware must support WDM (Windows Driver Model) in combination with DirectX version 8.1 or higher. In all other cases, the audio inputs will be emulated by DirectX (see the dialog help for the ASIO DirectX Full Duplex Setup dialog for details about how this is reported).

⇒ During the installation of Cubase AI, the latest DirectX version will be installed on your computer.

When the ASIO Direct<sup>®</sup>X Full Duplex driver is selected in the Device Setup dialog, you can open the ASIO Control Panel and adjust the following settings (for more details, click the Help button in the control panel):

- Direct Sound Output and Input Ports

In the list on the left in the window, all available Direct Sound output and input ports are listed. In many cases, there will be only one port in each list. To activate or deactivate a port in the list, click the checkbox in the left column. If the checkbox is ticked, the port is activated.

- You can edit the Buffer Size and Offset settings in this list if necessary, by double-clicking on the value and typing in a new value.

In most cases, the default settings will work fine. Audio buffers are used when audio data is transferred between Cubase AI and the audio card. While larger buffers ensure that playback will occur without glitches, the latency (the time between the moment Cubase AI sends out the data and when it actually reaches the output) will be higher.

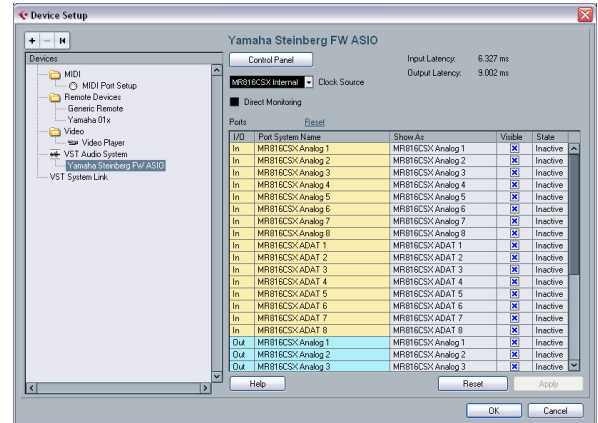
- Offset

If a constant offset is audible during playback of Audio and MIDI recordings, you can adjust the output or input latency time using this value.

## Setting up the input and output ports

Once you have selected the driver and made the settings as described above, you need to specify which inputs and outputs should be used and name these:


1. In the Device Setup dialog, select your driver in the Devices list on the left to display the driver settings for your audio hardware.



All input and output ports on the audio hardware are listed.

2. To hide a port, click in the “Visible” column for the port (deselecting the checkbox).

Ports that aren't visible cannot be selected in the VST Connections window where you set up your input and output busses – see [“Setting up the VST connections” on page 24](#) and the chapter “VST Connections: Setting up input and output busses” in the Operation Manual.

 If you attempt to hide a port that is already used by a bus you will be asked whether this is really what you want – note that this will disable the port!

3. To rename a port, click on its name in the “Show as” column and type in a new name.

⇒ It is a good idea to give your ports names that are related to the channel configuration (rather than to the actual hardware model)!

4. Click OK to close the Device Setup dialog and apply your changes.



## About monitoring

In Cubase AI, monitoring means listening to the input signal while preparing to record or while recording. There are three ways to monitor:

### External monitoring

External monitoring (listening to the input signal before it goes into Cubase AI) requires an external mixer for mixing the audio playback with the input signal. This can be a classic mixing desk or a mixer application for your audio hardware, if this has a mode in which the input audio is sent back out again (usually called “Thru”, “Direct Thru” or similar).

### Via Cubase AI

In this case, the audio passes from the input into Cubase AI, possibly through Cubase AI effects and EQ and then back to the output. You control monitoring via settings in Cubase AI.

This allows you to control the monitoring level from Cubase AI and add effects to the monitored signal only.

### ASIO Direct Monitoring

If your audio hardware is ASIO 2.0 compatible, it may support ASIO Direct Monitoring (this feature may also be available for audio hardware with Mac OS X drivers). In this mode, the actual monitoring is done in the audio hardware, by sending the input signal back out again. However, monitoring is controlled from Cubase AI. This means that the audio hardware's direct monitoring feature can be turned on or off automatically by Cubase AI.

Monitoring is described in detail in the chapter “Recording” in the Operation Manual. However, when setting up, there's one thing to note:

- If you want to use the external monitoring via your audio hardware, make sure the corresponding functions are activated in the card's mixer application.

⇒ If you are using RME Audio Hammerfall DSP audio hardware, make sure that the pan law is set to -3dB in the card's preferences.

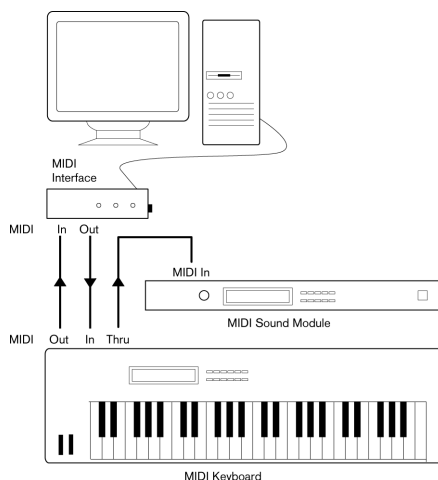
## Setting up MIDI

⚠ Make sure that all equipment is turned off before making any connections!

This section describes how to connect and set up MIDI equipment. If you have no MIDI equipment, you can skip this section. Note that this is only an example – you might need or want to hook things up differently!

### Connecting the MIDI equipment

In this example we assume that you have a MIDI keyboard and an external MIDI sound module. The keyboard is used both for feeding the computer with MIDI messages for recording and for playing back MIDI tracks. The sound module is used for playback only. Using Cubase AI's MIDI Thru feature (described later) you will be able to hear the correct sound from the sound module while playing the keyboard or recording.



A typical MIDI Setup

If you want to use even more instruments for playback, simply connect MIDI Thru on the sound module to MIDI In on the next instrument, and so on. In this hook-up, you will always play the first keyboard when recording. But you can still use all your devices for providing sounds on playback.

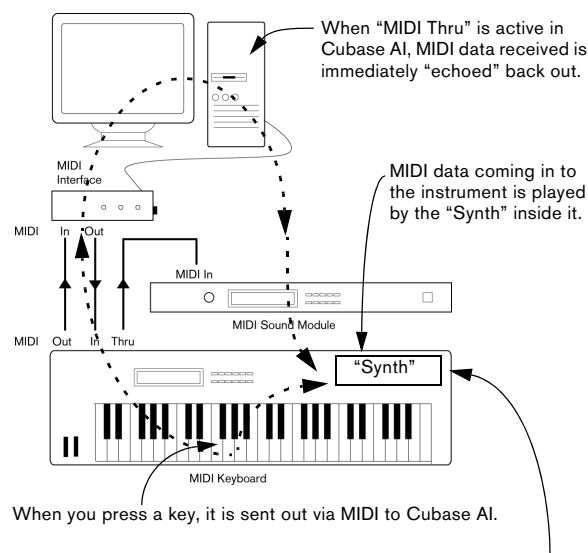
⚠ If you plan to use more than three sound sources, we recommend that you either use an interface with more than one output, or a separate MIDI Thru box instead of the Thru jacks on each unit.



## Setting MIDI Thru and Local On/Off

On the MIDI page in the Preferences dialog (located on the File menu under Windows and on the Cubase AI menu under Mac OS X), you will find a setting called “MIDI Thru Active”. This is related to a setting in your instrument called “Local On/Off” or “Local Control On/Off”.

- If you use a MIDI keyboard instrument, as described earlier in this chapter, MIDI Thru should be activated and that instrument should be set to Local Off (sometimes called Local Control Off – see the instrument's operation manual for details). The MIDI signal from the keyboard will be recorded in Cubase AI and at the same time be re-routed back to the instrument so that you hear what you are playing, without the keyboard “triggering” its own sounds.



- If you use a separate MIDI keyboard – one that does not produce any sounds itself – MIDI Thru in Cubase AI should also be activated, but you don’t need to look for any Local On/Off setting in your instruments.
- The only case where MIDI Thru should be deactivated is if you use Cubase AI with only one keyboard instrument and that instrument cannot be set to Local Off mode.
- MIDI Thru will be active only for MIDI tracks that are record enabled and/or have the Monitor button activated. See the chapter “Recording” in the Operation Manual for more information.

## Setting up MIDI ports in Cubase AI

The Device Setup dialog lets you set up your MIDI system in the following ways:

⇒ When you change MIDI port settings in the Device Setup dialog, these are automatically applied.

### Showing or hiding MIDI Ports

The MIDI ports are listed in the Device Setup dialog on the MIDI Port Setup page. By clicking in the “Visible” column for a MIDI input or output, you can specify whether or not it should be listed on the MIDI pop-up menus in the program.

If you are trying to hide a MIDI port which is already selected for a track or a MIDI device, a warning message will appear, allowing you to hide – and disconnect – the port or to cancel the operation and keep the MIDI port visible.

### Setting up the “All MIDI Inputs” option

When you record MIDI in Cubase AI, you can specify which MIDI input each recording MIDI track should use. However, you can also select the “In ‘All MIDI Inputs’” option for an input port, which causes any MIDI data from any MIDI input to be recorded.

The “In ‘All MIDI Inputs’” option on the MIDI Port Setup page allows you to specify which inputs should be included when you select All MIDI Inputs for a MIDI track. This can be especially useful if your system provides several instances of the same physical MIDI input – by deactivating the duplicates you make sure only the desired MIDI data is recorded.

⇒ If you have a MIDI remote control unit connected, you should also make sure to deactivate the “In ‘All MIDI Inputs’” option for that MIDI input.

This will avoid accidentally recording the data from the remote control when the “All MIDI Inputs” option is selected as input for a MIDI track.

## Connecting a synchronizer

⚠ Make sure that all equipment is turned off before making any connections!

When using Cubase AI with external tape transports, you will most likely need to add a synchronizer to your system. All connections and setup procedures for synchronization are described in the chapter “Synchronization” in the Operation Manual.



## Setting up video

⚠ Always make all connections with all equipment turned off!

Cubase AI plays back video files in a number of formats, including AVI, QuickTime or MPEG. Under Windows, video can be played back using one of the following playback engines: Video for Windows, DirectShow or QuickTime. This ensures compatibility with as wide a range of video files as possible. Under Mac OS X, QuickTime is always used as playback engine. Which formats can be played back depends on the video player and the installed codecs.

Generally there are two ways to play back video:

- Without any special hardware at all, using the computer CPU.

In this case, the “codec” is in software. While this will be fine in many situations it does put a limit on the size of the video window as well as the quality of the image.

- Using video hardware that for example connects to an external monitor.

Mac OS X: Using a FireWire port, you can play back video on an external monitor using a DV-to-analog converter or a DV camera (see also the chapter “Video” in the Operation Manual). This is valid for DV video and QuickTime is used for playback.

Windows: Multi-head graphics cards which support overlay functionality can be used to display the video picture on an external monitor. The following manufacturers have working (and tested) solutions available: nVIDIA and Matrox.

If you plan to use special video hardware, install it and set it up as recommended by the manufacturer.

Before you use the video hardware with Cubase AI, you should test the hardware installation with the utility applications that came with the hardware and/or the Windows Media Player or QuickTime Player (Mac OS X) applications.

## Optimizing audio performance

This section gives you some hints and tips on how to get the most out of your Cubase AI system, performance-wise. Some of this text refers to hardware properties and can be used as a guide when upgrading your system. This text is very brief. Look for details and current information on the Cubase AI web site (see [“How you can reach us”](#) on [page 7](#))!

## Two aspects of performance

There are two distinct aspects of performance with respect to Cubase AI.

### Tracks and effects

Simply put: the faster your computer, the more tracks, effects and EQ you will be able to play. Exactly what constitutes a “fast computer” is almost a science in itself, but some hints are given below.

### Short response times (latency)

Another aspect of performance is response time. The term “latency” refers to the “buffering”, i.e. the temporary storing, of small chunks of audio data during various steps of the recording and playback process on a computer. The more and larger those chunks, the higher the latency.

High latency is most irritating when playing VST Instruments and when monitoring through the computer, i.e. when listening to a live audio source via the Cubase AI mixer and effects. However, very long latency times (several hundred milliseconds) can also affect other processes like mixing, e.g. when the effect of a fader movement is heard only after a noticeable delay.

While Direct Monitoring and other techniques reduce the problems associated with very long latency times, a system that responds fast will always be more convenient to work with.

- Depending on your audio hardware, it may be possible to “trim” your latency times, usually by lowering the size and the number of buffers.

For details, refer to the audio hardware documentation, or, if you are using a DirectX driver under Windows, the dialog help.

## System factors that affect performance

### CPU and processor cache

It goes without saying that the faster the computer processor, the better. But there are a number of factors that affect the apparent speed of a computer: the bus speed and type (PCI is strongly recommended), the processor cache size and of course, the processor type and brand. Cubase AI relies heavily on floating point calculations. When shopping for a processor, please make sure you get one that is powerful in calculating floating point arithmetics.




Note also that Cubase AI features full support for multi-processor systems. So, if you own a computer system with more than one processor, Cubase AI can take advantage of the total capacity and evenly distribute the processing load to all available processors. See “[The advanced options](#)” on [page 21](#).

### Hard disk and controller

The number of hard disk tracks you can record and play back at the same time also depends on the speed of your hard disk and hard disk controller. If you use E-IDE disks and controllers, make sure that the transfer mode is DMA Busmaster. Under Windows, you can check the current mode by launching the Windows Device Manager and looking for properties of the IDE ATA/ATAPI Controller's primary and secondary channel. DMA transfer mode is enabled by default, but may be turned off by the system should hardware problems occur.

### Audio hardware and driver

The hardware and its driver can have some effect on regular performance. A badly written driver can reduce the performance of your computer. But where the hardware driver design makes the most difference is with latency.

 Again, we strongly recommend that you use audio hardware for which there is a specific ASIO driver!

This is especially true when using Cubase AI for Windows:

- Under Windows, ASIO drivers written specifically for the hardware are more efficient than the Generic Low Latency ASIO Driver or a DirectX driver and produce shorter latency times.
- Under Mac OS X, audio hardware with properly written Mac OS X (Core Audio) drivers can be very efficient and produce very low latency times.

However, there are additional features currently only available with ASIO drivers, such as the ASIO Positioning Protocol.

### Optimizing processor scheduling (Windows only)

To get the lowest possible latencies when using ASIO under Windows XP (on a single-CPU system), the “system performance” has to be optimized for background tasks:

1. Open the Windows Control Panel from the Start menu and select System.
2. Select the Advanced tab and click the Settings button in the Performance section.  
The Performance Options dialog appears.
3. Select the Advanced tab.
4. In the Processor Scheduling section, select “Adjust for best performance of: Background services”.
5. Click OK to close the dialogs.

### Making settings that affect performance

#### Audio buffer settings

Audio buffers affect how audio is sent to and from the audio hardware. The size of the audio buffers affects both the latency and the audio performance. Generally, the smaller the buffer size, the lower the latency. On the other hand, working with small buffers can be demanding for the computer. If the audio buffers are too small, you may get clicks, pops or other audio playback problems.

- Under Mac OS X, you can adjust the size of the buffers on the VST Audio System page in the Device Setup dialog. You may also find buffer settings in the control panel for the audio hardware.
- Under Windows, you adjust the buffer size settings in the control panel for the audio hardware (opened by clicking the Control Panel button on the driver page in the Device Setup dialog).

#### The advanced options

On the VST Audio System page you will find the “Advanced options” section. Here you find advanced settings for the VST Engine, including a Multi Processing option. When this is activated and there is more than one CPU in your system, the processing load is distributed evenly to all available CPUs, allowing Cubase AI to make full use of the combined power of the multiple processors. See the dialog help for details.



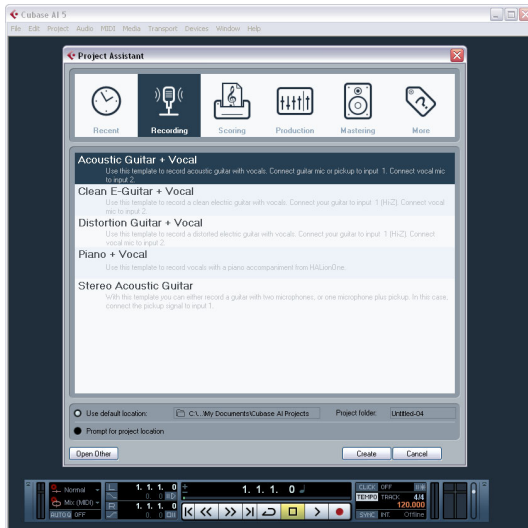




## Creating a new project

In this section we are going to explain how to create a new project, save a project and open a saved project.

When you first open Cubase AI, the Project Assistant dialog is opened which allows you to create a new, empty project, or a new project based on a project template, and to open an existing project.



⇒ By default, the Project Assistant dialog opens when you launch the program for the first time. You can change this behaviour using the On Startup setting in the Preferences dialog (General page). For more information about this and the Project Assistant dialog, see the chapter “File Handling” in the Operation Manual.

### To create a new project

In the following description we assume that the Project Assistant dialog is already open. If that is not the case, you need to select the “New Project...” command from the File menu first.

Proceed as follows:

1. Make sure that “Use default location” is activated.  
In Cubase AI you can set a default location for all your projects, i.e. specify a path where all your projects will be stored, each in its own subfolder.

2. In the “Project folder” field, enter a name that will be used for the project folder. Let's use “My first project”. We recommend to enter a name here. Otherwise your project will be saved in a folder named “Untitled”.

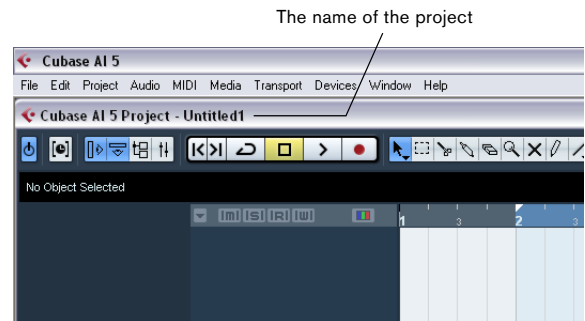
3. To create a blank new project that is not based on a preconfigured template, simply click Create.

An empty project is created automatically if you do not select a recent project or a project template in the Project Assistant dialog.

⇒ You are not saving the project at this point! You are creating a folder on the hard drive that your project will get saved into later. This will be explained very shortly.

4. You should be looking at your very first project in Cubase AI now. Congratulations!

If you look at the top of the window in Cubase AI (called the Project window) you'll see the name of this project is “Untitled1”.



⚠ You're not done yet!  
So far we've created a blank Cubase AI project. We have a folder sitting on the hard drive but we haven't saved the actual Cubase AI project yet.

### To save a project

1. Select “Save” from the File menu.

If you select the Save command for a project that has not been saved before, this opens the Save As dialog, where you can change the project path and name, if needed. The difference between Save and Save As is discussed in the chapter “File Handling” in the Operation Manual.

2. You will notice that Cubase AI is in the “My First Project” folder that you created earlier. This is where you want to save your project. Type in a name for your project – you can use “My First Cubase AI Project” for example.

3. Click “Save” – and that's it!



## To close a project

1. Make sure the Project window is selected.

The Project window is the main window that you work in. See the chapter “The Project window” in the Operation Manual.

2. Select Close from the File menu.

If you have made any changes to the project since you last saved it, you will be prompted to “Save”, “Don’t Save” or “Cancel”. Click Save if you want your changes saved.

## To open a project

Now that we have saved and closed your project, let’s show you how to open it.

### Open a project using the “Open” command

1. Select “Open...” from the File menu.

Here you can navigate to the folder that has the project you wish to open.

2. Once you have found the project click “Open” and the project will load.

### Open a project using the “Recent Projects” submenu

Cubase AI remembers recently opened projects and lists them in the “Recent Projects” submenu of the File menu.

1. Select “Recent Projects” from the File menu.
2. Select the project you wish to open by clicking on it.

⇒ You will also find these projects in the Recent category in the Project Assistant dialog.

## Setting up the VST connections

The VST Connections window allows you to set up the input and output signals of Cubase AI to your audio card. Cubase AI calls these “busses”. This section will show you how to set the busses up so that you can get playback and recording working.

Make sure you read the chapters [“System requirements and installation”](#) on [page 8](#) and [“Setting up your system”](#) on [page 13](#), so that your audio hardware is properly set up before proceeding.

⚠ Load the project called “VST Connections” found in the “Tutorial 1” folder.

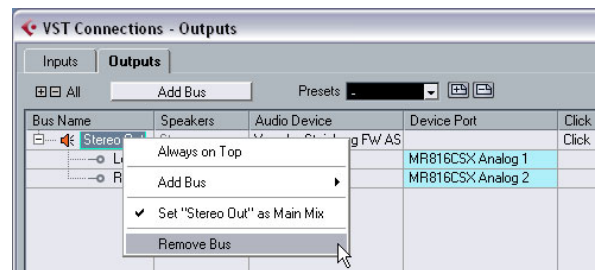
⇒ By default, the tutorial projects are not installed during the installation of Cubase AI. You will find these projects on the program DVD, in the folder “Additional Content”.

## Adding outputs

1. Open the Devices menu and select “VST Connections”. The default key command for this is [F4].

- You’ll see several tabs at the top of the window. We’re only going to cover Input and Output right now. See the chapter “VST Connections” in the Operation Manual for more details.

2. Let’s choose “Output” first. We want to start from scratch and remove anything that is currently there, just in case it’s set up incorrectly. If you see anything in the “Bus Name” column, right-click with the mouse and select “Remove Bus”.

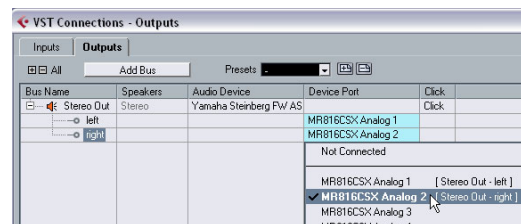


3. Now click the “Add Bus” button. Choose “Stereo” for configuration and “1” for count and click OK.

This has now added a new stereo bus (Left and Right) allowing us to have audio in Cubase AI routed to our audio hardware.

4. Since we mainly listen to our music as a stereo mix, all we need is a stereo output.

5. Depending on your audio hardware, your outputs should be set up now. You can however select the outputs of your choice from the “Device Port” pull down menu. Normally you’ll want to choose the main stereo outputs of your audio card. More sophisticated setups may require you to choose different outputs and even add more busses.





## Adding Inputs

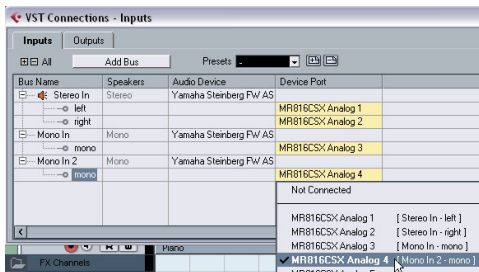
Now let's open the "Input" tab and set up the inputs we are going to use for recording into Cubase AI.

1. Do the same as mentioned above for the outputs. Right-click and select "Remove Bus".
2. Click the "Add Bus" button. Choose "Stereo" for configuration and "1" for count and click "OK".  
This has now added a new stereo bus (Left and Right) allowing us to have audio from our audio card's input routed to Cubase AI for recording.

- Having a stereo input is useful for recording audio with two channels. An example of this is recording a keyboard with a left and right audio channel. If we wanted to record in mono or with one channel we can make separate busses. Let's do this now.

1. Click the "Add Bus" button. Choose "Mono" for configuration and "2" for count and click "OK".  
This has now added two new mono busses allowing us to have audio from our audio card's input routed to Cubase AI for recording.

2. Next, click in the "Device Port" column to select the audio inputs of your audio card for the stereo and mono inputs.



That's it! You should now be ready to record audio in Cubase AI and then play it back.

## Level settings and recording

For this section, we are going to record a bass guitar in mono from the input "Mono In". Make sure you have your audio card set up and you have read through the section "[Setting up the VST connections](#)" on [page 24](#).

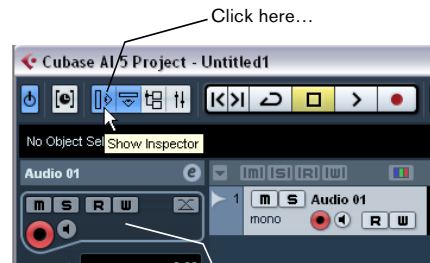
- ⚠ Load the project called "Recording" found in the "Tutorial 1" folder.

## Adding a mono track

1. Now let's add an audio track to record to. Open the Project menu and choose "Audio" from the "Add Track" submenu.  
This adds a mono audio track to our Project window.
2. Choose "Mono" for Configuration and "1" for Count. Click "OK".



3. Click on the new track you've created and make sure the Inspector is shown.  
The Inspector allows us to see and manipulate a lot of information for the selected track.



...to open the Inspector.



4. Make sure that “Mono In” is selected for the audio track’s input and that “Stereo Out” is selected for the audio tracks output.

You may have different inputs and outputs depending on your audio hardware. See the chapter “VST Connections” in the Operation Manual for more detailed information. By setting “Mono In”, we will be able to record the audio from the left input of our audio card into a track in Cubase AI. Setting the output to “Stereo Out” allows us to hear what we are recording.



## Turning on the metronome click

We’ll want to have a click or metronome play in the background as we record the bass guitar so that what we record aligns with the bars and beats in Cubase AI.

1. Activate the “Metronome/Click” button on the Transport panel.



2. If you would like a two bar count in before you record, also activate the “Precount/Click” button.



3. We now need to set the speed or the tempo of our project. This will directly affect how fast the click plays. You can set the tempo just below the click.



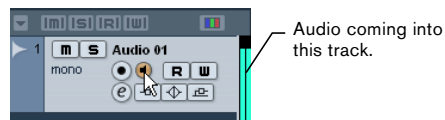
In this picture, we have a setting of 125, which means 125bpm (beats per minute).

## Setting levels

We have a bass guitar playing through an amplifier with a microphone in front of the amplifier’s speaker. This microphone is plugged directly into the audio card’s input. We have set the level so that we have enough volume without clipping.

1. Clicking the Monitor button will allow us to hear the bass guitar.

You should see and hear the audio coming in to the right of the track.



2. Now click the “Record Enable” button on the track. Setting the track to Record Enable lets Cubase AI know that you want to record on this track and no other one. You can have many tracks Record Enabled at a time.



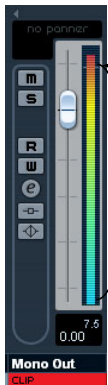


3. In the Inspector, open the “Channel” tab.  
This will display the channel fader for the selected track.



- Do the best you can to send the maximum amount of volume to the audio inputs of your audio card before you hear any distortion. Most audio cards show some kind of level or volume indication. If yours doesn't, don't worry, we can change the amount here.

4. Move the fader up or down so that the volume is loud enough without going into the red on the channel meter. If you go into the red you may cause clipping or distortion. You will see a line near the top of the channel meter – make sure the level does not go over this line!



- Once the level is set, you are ready to record!

## Recording bass guitar

1. Position the cursor at the beginning of the project.  
This will make sure we start recording on bar 1.
2. Click the Record button to record the bass guitar.  
Since the “Precount/Click” button is activated, we'll hear two bars of click before recording begins.
3. Click “Stop” when you are finished.
4. Turn off the Monitor and Record Enable buttons on the track so that we don't hear the input or record on the track any more.

Congratulations! You have just recorded your first piece of audio in Cubase AI. Move ahead to the next section to learn how to play back audio.



## Playback

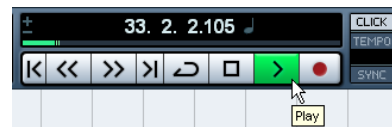
We are going to learn how to play back audio in Cubase AI. You might think this is very simple – just hit “Play”. It is actually this simple but there are a few tricks to learn so that you'll be playing back what you want with precision.

- ⚠ Load the project called “Playback” found in the “Tutorial 1” folder.

### To start playback

There are a few ways you can play back in Cubase AI:

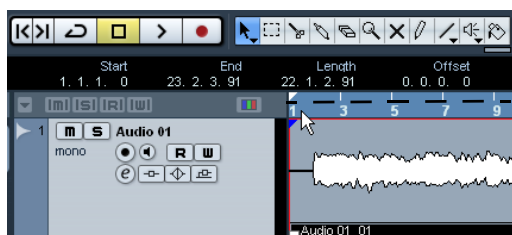
- Click the “Play” button on the Transport panel.



- Press [Space] on your computer keyboard.  
This toggles between start and stop.
- Press the [Enter] key of the numerical computer keypad.



- Double-click in the lower half of the ruler.



- Select the event and choose “Loop Selection” from the Transport menu.

⚠ The default key command for this is [Shift]-[G]. This is the quickest way to loop an audio event and start playback!

## To stop playback

- Click the “Stop” button on the Transport panel.
- Clicking the “Stop” button twice moves the cursor to the position in the project where you started playback.
- Press [Space] on your computer keyboard. This toggles between stop and start.
- Press the “0” key of the numerical computer keypad.

## Cycle playback

Cubase AI has the ability to loop or cycle a section of your project. To set the cycle location you need to use the left and right locator.

1. On the Transport panel, set the left locator to “1” and the right locator to “5”.  
This tells Cubase AI that we want to loop or cycle between bars 1 and 5. Meaning we will have a 4 bar loop since the end of bar 4 is the beginning of bar 5.

The left locator set to “1”.



The right locator set to “5”.

2. Make sure that the “Cycle” button is activated.

3. Click the Play button on the Transport panel and Cubase AI will play looping over and over until you click “Stop”.

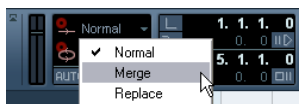
⚠ Don't forget – you can set the locators to encompass the selected event, turn on “Cycle” and begin playback all by the key command [Shift]-[G].

## Recording modes with cycle off

There are three different modes for recording when the cycle is turned off. This is called linear recording. The three modes are:

- Normal
- Merge
- Replace

When recording audio, “Normal” and “Merge” are the same. Selecting either of these will allow you to record over the top of another audio event and it will appear as an overlap. You can then select between the overlapping events and determine which one will play. This is discussed in the following section.



When recording in “Replace” mode, audio that was previously recorded on the same track is cut or split to make room for the new audio data. However, the “old” recording that is being replaced is not permanently deleted. It is only cut or trimmed away allowing you to recover it later.



## Cycle recording

You can record audio while “cycle” is on.

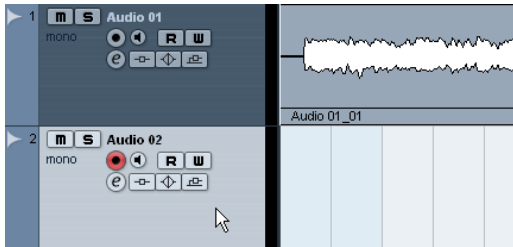
⚠ Load the project called “Cycle Recording” found in the “Tutorial 1” folder.

So far we’ve shown you how to add tracks, record and playback. Now we are going to add an electric guitar to our bass guitar using cycle recording. Recording with cycle on allows us to make multiple passes of our recording and then pick the best take.

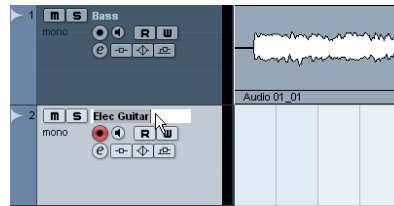
If you haven’t reviewed the previous sections in this tutorial, please do as we are going to move a little faster now.

### Recording electric guitar

1. Let’s add another “Mono” audio track.  
This is described in the section [“Adding a mono track”](#) on [page 25](#).
2. You can see now that we have a track called “Audio 01” and “Audio 02”. Up to now we haven’t been concerned about naming the tracks but let’s do this now.



3. Double-click on “Audio 01” and rename it “Bass”.
4. Double-click on “Audio 02” and rename it “Elec Guitar”. That looks a lot better now.
  - It’s always good to name your tracks before you start to record. This way the audio event too will take this name. Since “Audio 01” was the name of our first track the audio event is named “Audio 01\_01”. The suffix “\_01” being the first event recorded on the “Audio 01” track. We’ll show you how to rename your audio files in the chapter [“Tutorial 2: Editing audio”](#) on [page 31](#).



5. Make sure “Cycle” is activated, set the left locator to 2 and the right locator to 18.

This will loop or cycle between bars 2 and 18.



6. On the Transport panel, make sure “Mix (MIDI)” is selected for the “Cycle Record Mode”.

This will allow us to record the electric guitar, and as each cycle repeats a new take will be created. We will then choose the best take to keep as our guitar line.

Cycle Record Mode



7. Activate the Record Enable and Monitor buttons on the “Elec Guitar” track.

8. Click the “L” button on the Transport panel once.

This will make sure we start recording at the left locator.



9. Click the “Record” button on the Transport panel.  
As you record the guitar, let the cycle repeat three times so we have three different guitar takes.
10. Click “Stop” when you’re finished. We’ve just recorded three different guitar takes. Now let’s figure out how to select the best sounding one.

⚠ Load the tutorial called “Cycle Recording 2” found in the “Tutorial 1” folder.

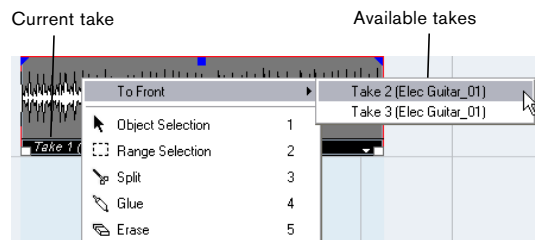


## Selecting different takes

1. Holding [Alt]/[Option], right-click on the new guitar audio event that we just recorded and choose a take from the “To Front” submenu.

If you right-click without holding a modifier key, you will see the toolbox instead of the context menu. This behavior is determined by the “Popup Toolbox on Right Click” option in the Preferences dialog (Editing–Tools page).

Cubase AI has recorded all of the passes we made when we were recording in loop mode (Cycle Recording). These passes are called “Takes”. In our example we have three different guitar takes. We can pick between them and choose which one sounds best.



2. Listen to the different takes and when you are done, choose “Take 1”.







## Event operations

In this section we'll learn how to edit events or parts. This includes rename, resize, split, glue, move, copy, repeat, mute, erase and adding a fade.

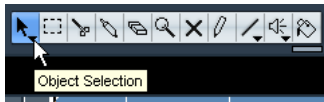
⚠ Load the project called “Event Operations” found in the “Tutorial 2” folder.

### Renaming

If we look at the audio events that we recorded earlier, we notice that the bass track has an audio event on it called “Audio 01\_01”. This is because the name of the track was originally “Audio 01” and the suffix “\_01” means that it is the 1st audio file to be recorded on the track. The second audio file would be called “Audio 01\_02”.

Naming your audio files keeps your project clean and easy to understand. Let's rename “Audio 01\_01” to “Bass”:

1. Choose the Object Selection tool.



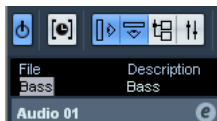
2. Click on the event “Audio 01\_01”.
3. Make sure “Show Event Info Line” is activated on the toolbar.



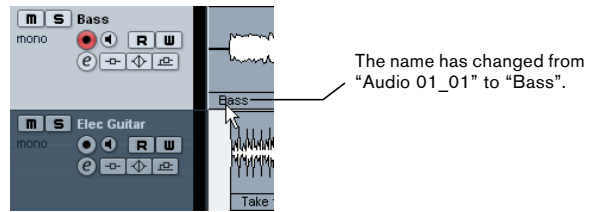
▪ The “Event Info Line” gives us detailed information about an object or objects that are currently selected in the event display.

4. Change “Audio 01\_01” to “Bass” underneath the word “File”.

This changes the audio file's name directly on the hard drive – easy!



5. Notice that our audio event now says “Bass”.



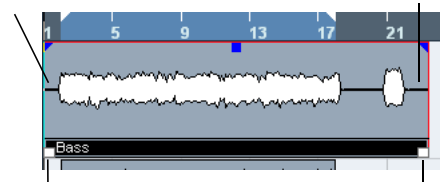
### Resizing

You resize an event by adjusting the start and/or end of the event. Used in combination with the split tool this is usually all the editing you'll need.

1. Choose the Object Selection tool.
2. Click on the event you wish to resize.

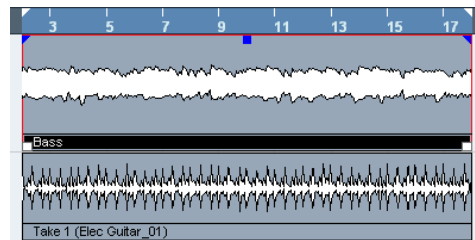
In our case let's change the “Bass” event.

There is extra space on either side of the Bass audio event that we don't want.



White squares appear on the bottom left and bottom right of the event. Resize the event with these.

3. Position the mouse pointer over one of the squares at the bottom right or bottom left of the event. Click and adjust the “Bass” event so that it lines up with “Elec Guitar\_01”.





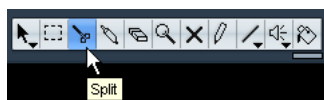
## Splitting

Splitting is used to cut events. You can split or cut an event wherever you want or split them evenly to bars and beats.

### Splitting with “Snap” off

Splitting with “Snap” off allows you to cut anywhere without locking to any kind of reference like bars and beats.

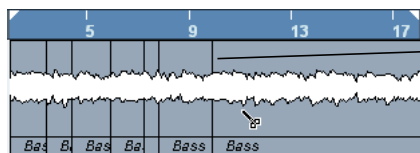
1. Choose the Split tool.



2. Make sure “Snap” is off (not highlighted).



3. You can now split or cut the audio anywhere by clicking on the event.



4. Undo your actions by choosing “Undo Split” from the Edit menu as many times as you used the Split tool.

Make sure there are no splits in the “Bass” event any more.

### Splitting with “Snap” on

Having “Snap” on allows you to split or cut to a time reference. For example, if you want to cut the “Elec Guitar” track to bars or beats.

1. Choose the Split tool.
2. Make sure “Snap” is on.

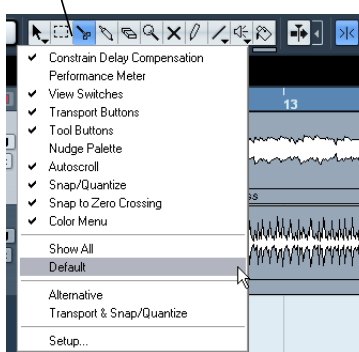
Snap allows you to edit to various time frames. The most common one is bars and beats. Meaning you can cut exactly to the bar with “Snap” turned on. With it turned off you can cut anywhere. See more about “Snap” in the chapter “The Project window” in the Operation Manual.



3. If you are having trouble seeing anything beyond the “Tool Buttons”, right-click in the toolbar (the top bar that the “Tool Buttons” are on).

This allows you to change what you see at the top of the Project window. Customization is in the heart of Cubase AI.

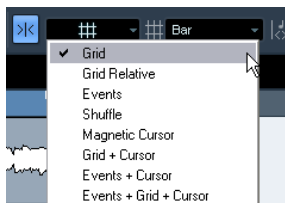
Right-click in the toolbar.



There is more to see but your screen resolution may prevent you from seeing everything.

4. Choose “Default” so that if you changed anything it will return to the default settings.

5. Choose “Grid” from the Snap mode pop-up menu to the right of the Snap button.



This means we'll be snapping to a grid.

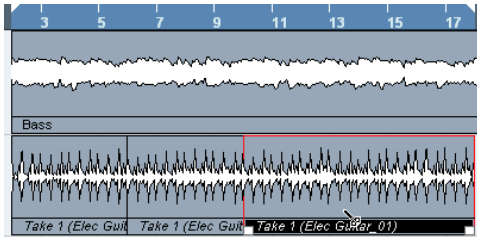
6. Next choose “Bar” as the “Grid Type”.



This means you will split to bars.

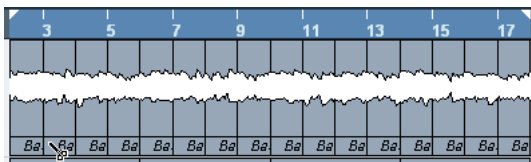


7. You can now split the “Elec Guitar\_01” event precisely to the bar. Cut on bars 6, 10 and 14.



### Splitting with [Alt]/[Option]

1. Choose the Split tool.
2. Hold down [Alt]/[Option] and click on the bass event at bar 3 and the length of the split will be repeated until the end of the event.  
You can try this with “Snap” on or off.

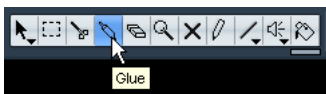


3. Select “Undo Split” from the Edit menu and return the bass to the way it was.

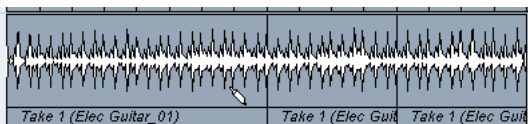
### Gluing or joining events

Using the Glue tool allows you to join events together that have been cut using the Split tool.

1. Choose the Glue tool.



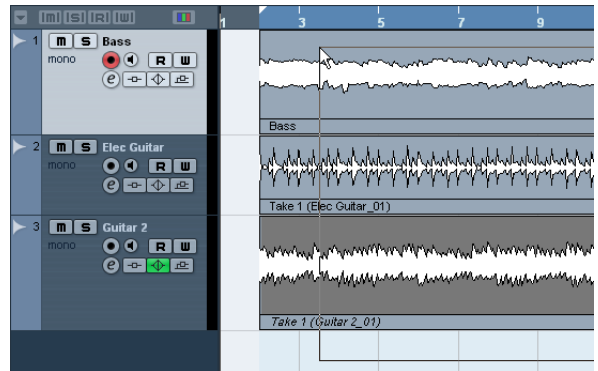
2. Glue together the split events in the “Elec Guitar” track by clicking just before each split.  
Let's make sure we glue all of them.



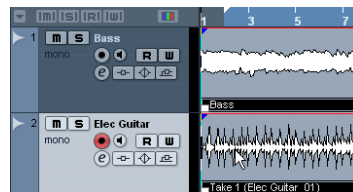
### Moving events

Let's now move all the events in the Project window from bar 2 to bar 1.

1. Choose the Object Selection tool.
2. Click and hold the mouse on an empty area of the Project window. Drag to create a selection of all the events. When you release the mouse button, all the events will be selected.



3. With all the events selected, click and drag them to bar 1.



4. Click on an empty area of the Project window so that no event is selected.



## Copying events

Copying can be used to copy an event to another area in the Project window. If you want to make several copies in one go, see [“Repeating”](#) on page 35.

### Using Copy and Paste

1. To copy an audio event, click on the desired event and choose “Copy” from the Edit menu.

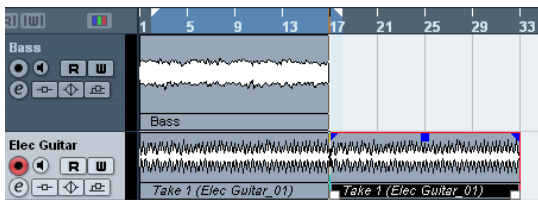
In our case let’s choose the “Elec Guitar\_01” event.

2. Position the cursor at the point in the project that you wish the copy to be made.

We’ll put our cursor at bar 17.

3. Make sure you click on the track that you want the copied event to be copied to. Choose “Paste” from the Edit menu.

It is possible that you may have another track selected. If so the “Paste” command would paste it to a different track. Always note the track you have selected before choosing “Paste”.



4. Now we have two guitar events.

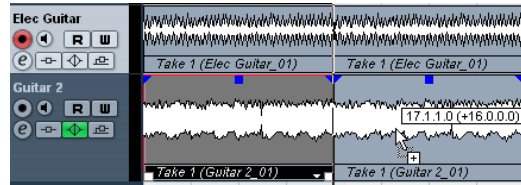
### Using the [Alt]/[Option] key

1. Choose the Object Selection tool and hold down [Alt]/[Option].

2. We are going to copy the “Guitar 2” events. Remember that there are three events. Select all of the “Guitar 2” events by clicking and dragging as described above.

3. Click and hold the selected events and drag to the position you wish the copy to be made. Then release the mouse button.

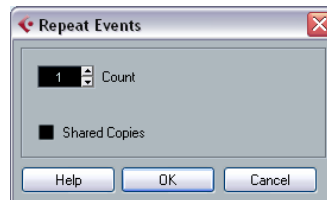
Don’t worry about the “Scissor” icon that appears. As soon as you click and hold on the event you are copying it switches to an arrow with a “+” sign indicating that you are copying.



## Repeating

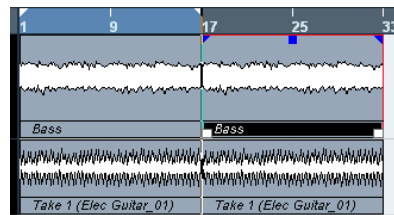
Repeats are great for repeating something over and over directly after the event you want to repeat.

1. Click the bass event with the Object Selection tool.
2. Choose “Repeat...” from the Edit menu.
3. In the dialog that opens, choose how many copies you wish to make by increasing the value in the “Count” field.



- You can choose to select “Shared Copies” if you want. Shared copies allow you to make aliases to the original event. This means that if you make changes to the original event (such as processing or editing), the copies will reflect those changes. This is a big time saver!

4. Click “OK” and the repeat will be placed directly after the Bass event.





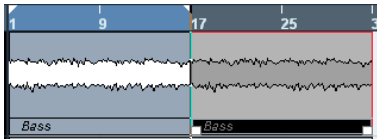
## Muting

Muting an event stops you from hearing just that event. You may want to mute events on a track so that the track continues to play except for the events you mute. Note that this is different from muting a track.

1. Choose the Mute tool.



2. Click on the event you wish to mute.



3. To unmute an event, click on the muted event with the Mute tool again and it returns to normal.
  - If you drag with the Mute tool you can mute a number of events at a time. Equally this will unmute events that are muted.

## Erasing

1. Choose the Erase tool.



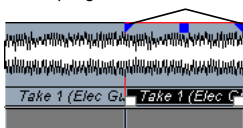
2. Click on the events you wish to erase.

## Adding a fade

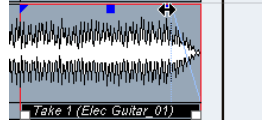
You can add a fade to an event to give the effect that the event is fading in or fading out.

1. Choose the Object Selection tool.
2. Click on the event you wish to add a fade to.

Notice the blue triangles that appear at the top left and top right of the event.

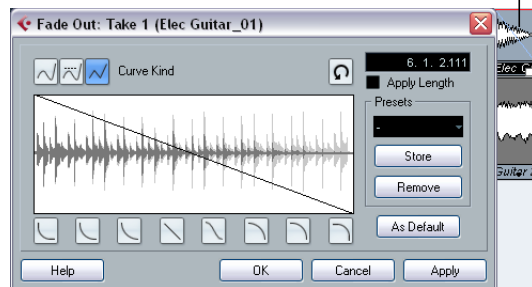


3. Click on one of the blue triangles and move it so that a fade appears.



4. For more advanced fades you can double-click on the fade area to open up the fade dialog. See the chapter “Fades and Crossfades” in the Operation Manual for more information.

Double-click in this area to open the fade dialog.



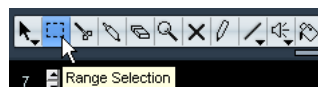
- ⚠ Load the project called “Event Operations 2” found in the “Tutorial 2” folder. This project has all the event operation changes you’ve learned so far.

## Processing audio

Cubase AI has the ability to make changes to the audio in more ways than splitting and resizing. You can normalize, reverse and time stretch, to name a few. For a full explanation on processing audio, see the chapter “Audio processing and Functions” in the Operation Manual.

- ⚠ Load the project called “Processing Audio” found in the “Tutorial 2” folder.

You can process the whole audio event or use the Range Selection tool and select just the section of audio you want.



Let’s show you how to Normalize and Reverse an audio event.



## Normalize

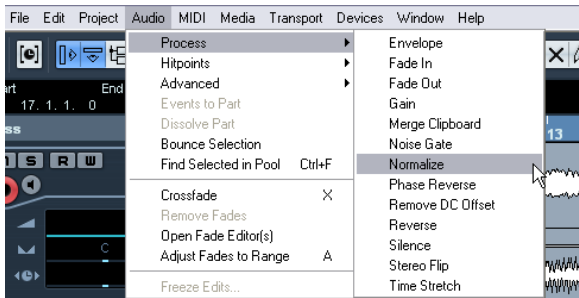
Normalize raises the volume of the audio to the desired amount. Usually you adjust the slider to “0” dB or “-1” dB so that you get the maximum volume without clipping your audio. A common use for Normalizing is to raise the level of audio that was recorded at too low an input level.

⇒ Please note that in some situations, this function may lead to distortion. Therefore, you should use it carefully and listen to the audio material afterwards, to make sure it sounds as intended.

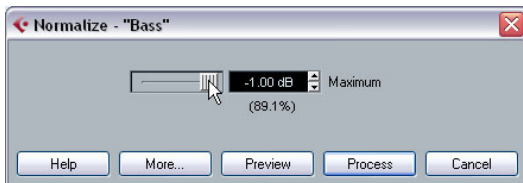
1. With the Object Selection tool, click on the audio event you wish to change. Let’s pick the Bass audio event. You can also use the Range Selection tool and select the section of audio you want.



2. On the Audio menu–Process submenu, select “Normalize”.



3. Adjust the slider to the amount you desire. A setting of “0” db or “-1” db is common.



4. Click the Process button and your audio is now normalized.

For a description of the “More” and “Preview” buttons, see the chapter “Audio Processing and Functions” in the Operation Manual.

## Reverse

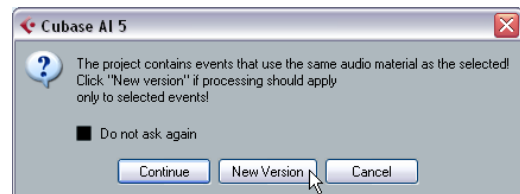
The “Reverse” command reverses the audio selection. This will sound as if you were playing a tape backwards.

1. With the Object Selection tool, click on the audio event you wish to change. In our case, let’s pick the bass audio event.

You can also use the “Range Selection” tool and select the section of audio you want.

2. On the Audio menu–Process submenu, select “Reverse”.

3. If you have copied events in the Project window, this dialog box will open. It asks if you want all the copied events changed (Continue) or if a new version is to be created so that only your selection is affected (New Version).



4. Clicking either “Continue” or “New Version” will reverse your audio.



**Tutorial 3: Recording and editing MIDI**



# Introduction

In this chapter, we are going to add some more instruments to our song. In the previous tutorials, we have recorded audio. Now we are going to record using MIDI.

There are two ways in which we can have MIDI sounds appear in Cubase AI: via virtual instruments, that is a synthesizer inside your computer or through the use of a traditional hardware keyboard.

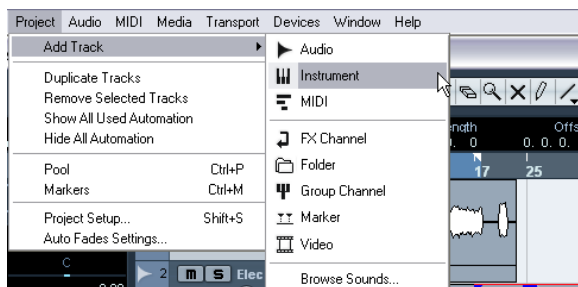
This tutorial will focus on virtual instruments.

## Creating an instrument track

⚠ Load the project called “Recording MIDI 1” found in the “Tutorial 3” folder.

1. Let’s start by adding a string part to our song. From the Project menu on the Add Track submenu, select “Instrument”.

In previous versions of Cubase AI, you needed a MIDI track routed to a virtual instrument found in the “VST Instruments” window. You can still use this method but instrument tracks are far more convenient.

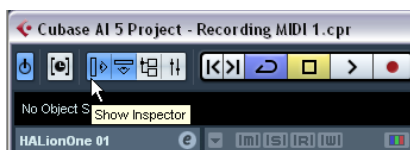


2. From the “Instrument” pop-up menu, choose “HALionOne”, then click “OK”.

An instrument track is created below the selected track in the Project window.



3. Make sure the Inspector is shown.



4. Click in the name field of the instrument track. It should be the only instrument track you created, so the name should be “HALionOne 01”. We can double-click on this and change it to “Strings”.



5. Click on the “Edit Instrument” button to open the control panel for “HALionOne”.



6. If you want “HALionOne” to stay always on top while you are working you can right-click on the bar near the top of the instrument and select “Always on Top”.

Right-click here to select “Always on Top”.





## Browsing sounds

We are now going to load sounds into our virtual instrument “HALionOne”.

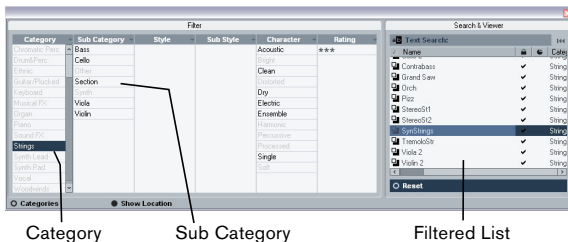
⚠ Load the project called “Recording MIDI 2” found in the “Tutorial 3” folder.

1. Click the “Preset” button in “HALionOne” and choose “Load Preset” from the pop-up menu.



2. In the window that appears, click the Categories button to display the Filter section.

3. In the “Category” section, make sure only “Strings” is selected by deselecting anything else and clicking on “Strings”. You have filtered the list to only show strings. Choose a string sound from the list on the right.



## MIDI recording

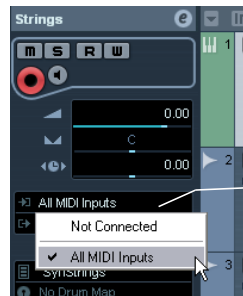
Now that we have our sound, let's record something. Recording MIDI is very similar to recording audio, see the chapter “Tutorial 1: Recording audio” on page 22.

1. Make sure you have a MIDI keyboard connected to your computer either directly through USB or a MIDI interface. See the chapter “Setting up your system” on page 13 for information on setting up MIDI in your computer.

2. We want to have our MIDI keyboard routed to this track and play “HALionOne”. Make sure the Inspector is shown so we can see our MIDI input and output routing.

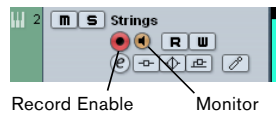
3. Next, on the Input Routing pop-up menu, choose the MIDI input you wish to use.

Most people leave this on “All MIDI Inputs” since you don't have to worry about which input is which. “All MIDI Inputs” takes the MIDI signal from all your inputs and routes it to this track. There are some cases where you wouldn't want this but for 99% of the time you'll be safe with this option selected.



4. Below the MIDI Input Routing pop-up menu, you can set the MIDI output. This is set to our virtual instrument “HALionOne”. If for any reason you need to change this to another instrument you can do this here.

5. Activate the Record Enable and Monitor buttons on the track and play some notes on your MIDI keyboard. You should see and hear the MIDI signals coming in to the right of the track.



Record enabling the track lets Cubase AI know that you want to record on this track. You can have many tracks record enabled at a time.

6. Set the left locator to bar “1” and the right locator to bar “57”.

7. Make sure Cycle is turned off.

We are going to record without looping. We'll cover MIDI cycle recording in the section “Cycle recording” on page 42.

8. Press [1] on the numeric keypad of your computer keyboard.

This will move the cursor to the left locator.

9. Click the Record button and record a few bars of music.

10. Click the Stop button when you are finished.



11. Turn off the Monitor and Record Enable buttons on the track so that we don't hear the input or record on the track any more.



Congratulations! You have just created your first MIDI recording in Cubase AI. Move ahead to the next section to learn how to play back MIDI.

## MIDI playback

We are now going to learn how to play back MIDI in Cubase AI. You might think this is very simple – just hit “Play”. It is actually this simple, but there are a few tricks to learn so that you’ll be playing back what you want with precision.

⚠ For this section, make sure you load the project “MIDI Playback” found in the “Tutorial 3” folder.

### To start playback

- Click the Play button on the Transport panel.



- Press [Space] on your computer keyboard. This toggles between start and stop.
- Press the [Enter] key of the numerical computer keypad.
- Double-click in the lower half of the ruler.
- Select the MIDI event and choose “Loop Selection” from the Transport menu.

⚠ The default key command for this is [Shift]-[G]. This is the quickest way to loop the selected MIDI event and start playback!

### To stop playback

- Click the Stop button on the Transport panel.
- Clicking the Stop button twice moves the cursor to the position in the project, where you started playback.

- Press [Space] on your computer keyboard. This toggles between stop and start.

- Press the “0” key of the numerical computer keypad.

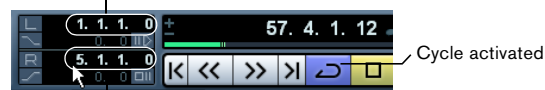
## Cycle playback

Cubase AI has the ability to loop or cycle a section of your project. To set the cycle location you need to use the left and right locator.

- On the Transport panel, set the left locator to “1” and the right locator to “5”.

This tells Cubase AI that we want to loop or cycle between bars 1 and 5. Meaning we will have a 4 bar loop since the end of bar 4 is the beginning of bar 5.

The left locator set to “1”.



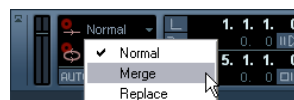
The right locator set to “5”.

- Make sure that the Cycle button is activated.
- Click the Play button on the Transport panel and Cubase AI will play looping over and over until you click Stop.

## Recording modes with cycle off

There are three different modes for recording when the cycle is turned off. This is called linear recording.

- Normal**  
“Normal” allows you to record on top of previously recorded MIDI. You will be able to see both MIDI parts on the screen overlapping each other.
- Merge**  
“Merge” joins or merges any MIDI data previously recorded on the track. An example of this is when recording drums – adding the kick drum on one pass and then the snare drum on another pass. The MIDI data is then joined together as one MIDI part.
- Replace**  
“Replace” mode will replace or overwrite any previous MIDI recording that was on the track.





## Cycle recording

You can record MIDI while the Cycle is activated.

- ⚠ Load the project called “Cycle Recording MIDI” found in the “Tutorial 3” folder.

### Recording MIDI drums

1. Let's add another “Instrument” track and choose “HALionOne” as our instrument.  
This is described in the section [“Creating an instrument track”](#) on [page 39](#).
2. Click in the program field in the Inspector and load a drum sound of your choice found under the category “Drums&Perc”, sub-category “Drumset”.
3. Rename this new track to “Drums”.
4. Make sure the Cycle button is activated and set the left locator to “9” and the right locator to “13”.

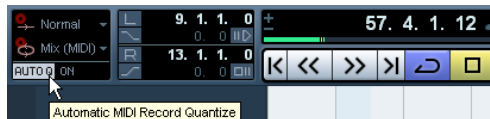


This will loop or cycle between bars 9 and 13.

5. On the Transport panel, make sure “Mix (MIDI)” is selected for the “Cycle Record Mode”.  
This will allow us to record the drums, and as each cycle repeats, the MIDI will mix together into one part. This makes it easy to create complex drum rhythms.



6. Activate the “AUTO Q” button. This is the automatic quantize function which will lock our MIDI to the beat as we record it. Great if we play off time a bit.



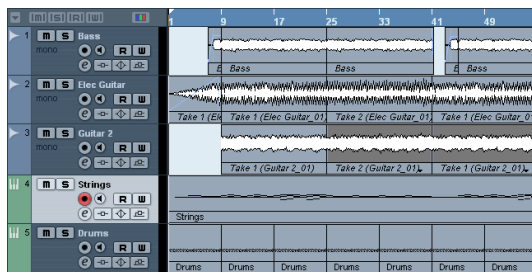
7. Next we have to set the value of our quantize. This is so Cubase AI knows what to lock our MIDI notes to. Choose “1/8” notes from the “Quantize Type” pop-up menu.



8. Activate the Record Enable and Monitor buttons on the “Drums” track.
9. Click the “L” button on the Transport panel once.  
This will make sure we start recording at the left locator.
10. Activate the Record button on the Transport panel and let's record hi-hat on the first pass, kick on the second pass and then finally snare on the third.
11. Hit “Stop” when you're finished.



12. Now move and copy this drum part so that the rest of the song has a drum beat.  
This is described in the chapter [“Tutorial 2: Editing audio”](#) on [page 31](#).



13. Glue all the parts together as one.  
This is described in the chapter [“Tutorial 2: Editing audio”](#) on [page 31](#).



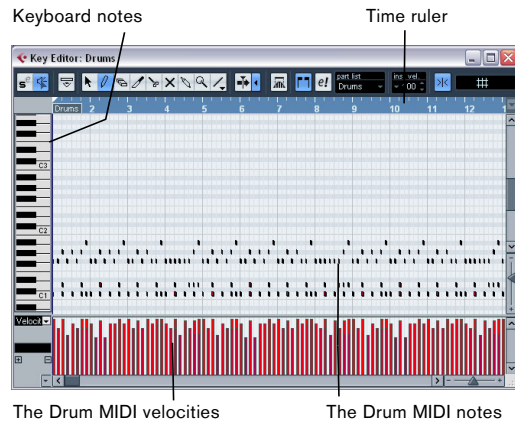
# The Key Editor

In the Key Editor we can make changes to our MIDI data.

- ⚠ Load the project called “Key Editor” found in the “Tutorial 3” folder.

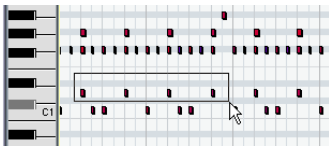
## Erasing MIDI notes

1. Double-click on the “Drums” to open the Key Editor. Here we can see our drum notes lined up with a keyboard on the left. At the bottom we have the velocity of each of the MIDI notes and at the top we can see the time ruler.



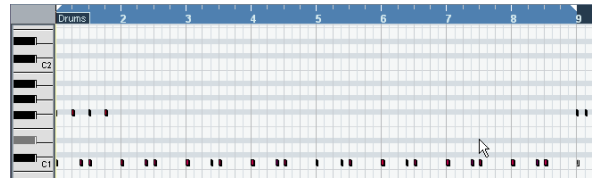
2. We want the song to start off with hi-hat and kick drum. Erase the snare by clicking once and holding the mouse while dragging a selection over the snare drum. Make your selection from bars 1 through 8.

A common term for this is to “lasso” the notes.



3. Press the [Delete] key to delete the snare notes.
4. Zoom in on the bar 1 and delete all the hit-hat notes with the Erase tool of the Key Editor so that you only hear 1/4 notes.

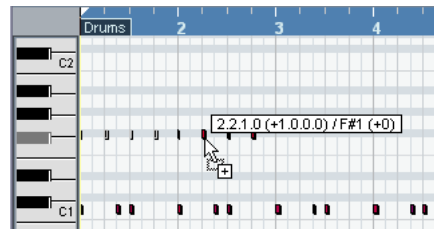
5. Now erase all the other hi-hat notes from bar 2 through 8 using any method you like.



## Copying MIDI notes

Let's copy the MIDI notes in bar 1 to bars 2 through 8.

1. Lasso the hi-hat notes in bar 1. Hold down [Alt]/[Option] and drag the notes in bar 1 to bar 2. This copies them.

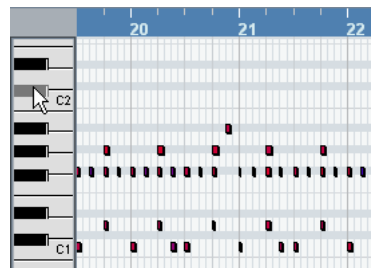


2. Continue copying until bar 9.

## Creating or drawing in MIDI notes

Now we need to draw in a cymbal crash in bar 25.

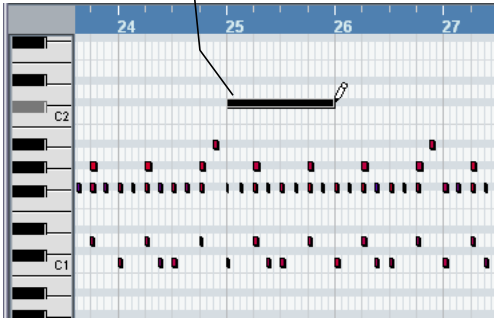
1. Scroll over to bar 25 and click on the piano roll on the left hand side of the Key Editor. Click on the notes until you hear a crash cymbal that you like. There is a good one at C#2.





2. Select the Pencil tool of the Key Editor and draw in the crash cymbal note at bar 25 by clicking and dragging for a full bar.

Click and drag with the Pencil tool.

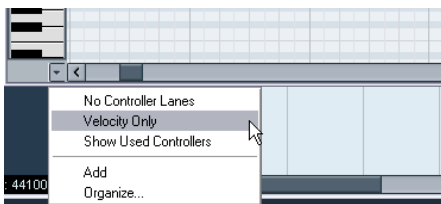


## The Controller lane

The “Controller Lane” allows us to add in or modify MIDI data such as velocity and controller information. The most common use for this is to edit velocity, pitchbend and controller numbers for things like filter etc.

If you find that the MIDI velocity is too loud or quiet on certain notes, you can view and edit them at the bottom of the Key Editor.

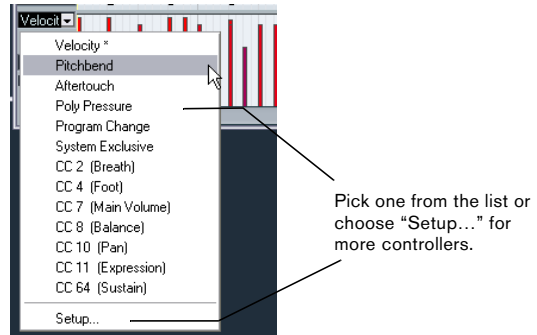
1. Make sure you can see the Controller Lane by clicking on the “Controller Lane Presets” button at the bottom left of the Key Editor.



2. Choose “Velocity Only” to view the velocity.

3. You can choose the MIDI information you wish view or change from the pop-up menu.

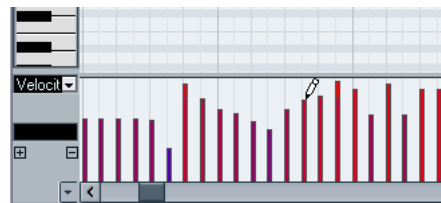
4. You can also select “Setup...” to view more controllers.



Pick one from the list or choose “Setup...” for more controllers.

5. Click and drag in the Controller lane to draw in new velocities for the notes.

You can even draw in curves and ramps using the Line tool in its various modes.





**Tutorial 4: Mixing and effects**



# Introduction

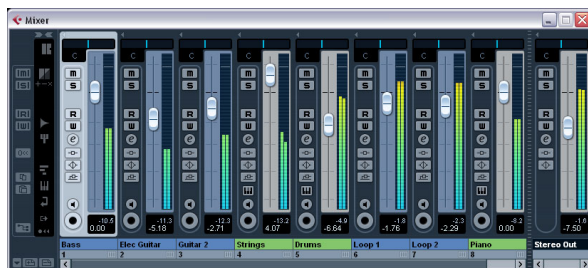
In this section we'll draw from the last tutorials and finally get a mix ready with proper levels, EQs and effects. Automation will be added and then we'll export the audio.

- ⚠ Load the project called "Mixing 1" found in the "Tutorial 4" folder.

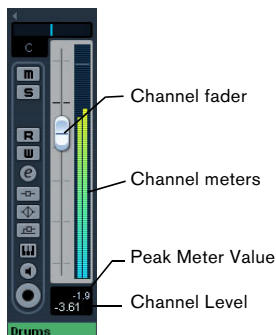
## Setting levels

The first thing we want to do is to set the levels for our project. This helps us get a preliminary balance of the mix so we can add EQ and effects later.

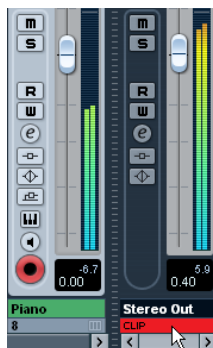
1. Select the Mixer from the Devices menu.  
The default key command for this is [F3].
2. Click the Play button on the Transport panel and listen to your mix.
3. Move the faders for each track so that you can hear all of the mix the way you like it.



4. If for any reason you need to get the fader back to 0dB (default setting), you can [Ctrl]/[Command]-click directly in the fader area.



5. You can also change the fader setting by double-clicking in the "Channel Level" area and entering the level manually.
6. Be careful when it comes to how loud you raise the faders. Make sure you keep levels at a good volume so that they are as loud as possible without clipping. You will always know when you are clipping: when the "CLIP" indicator lights up on the output channel. If it does, lower your levels and click on "CLIP". This will reset the warning light.



- That's it for setting the levels. Let's look at the panorama next.

## Setting panorama

- ⚠ Load the project called "Mixing 2" found in the "Tutorial 4" folder.

1. Setting the panorama (pan) for each track moves its position in the stereo mix. It will either keep the signal balanced in the middle of the left and right speaker, lean to the left or lean to the right or be completely in the left or right speaker.



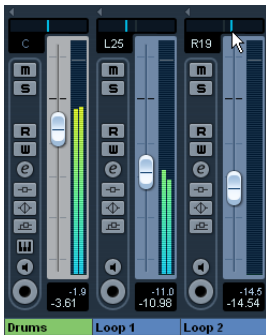
- To get the panner back to the center (the default position), [Ctrl]/[Command]-click anywhere in the panner area.



2. Let's pan our two guitars slightly left and slightly right. This will spread them out a bit.



3. Keep the "Drums" track in the middle but let's move "Loop 1" a bit to the left and "Loop 2" a bit to the right. This will give our rhythm section a larger, more spacious sound.

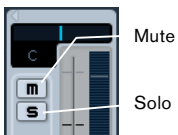


That's it for pan, let's move on to Mute and Solo.

## Mute and solo

⚠ Load the project called "Mixing 3" found in the "Tutorial 4" folder.

- For each track there is an "M" for mute and "S" for solo button. Mute will prevent you from hearing the track and solo will only play that track or tracks which have "S" highlighted.



- You can have several tracks muted or soloed at a time.
- When you solo a track, the other tracks become muted.
- If you want to clear or deactivate all the mutes or solos, click on the "Deactivate all Mute" or "Deactivate all Solo" buttons in the common panel to the left of the Mixer.



- There may be times when you want certain tracks to always play even if another track has solo active. If you [Alt]/[Option]-click on the "S" button, this will place the track in "Solo Defeat" mode. This allows the track to always play even if you solo another track.



- To take a track out of "Solo Defeat" mode simply [Alt]/[Option]-click it again.

That's it for mute and solo, let's move on to adding EQ.

## Adding EQ

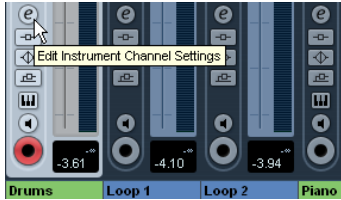
⚠ Load the project called "Mixing 4" found in the "Tutorial 4" folder.

EQ or equalization amplifies or attenuates frequencies so that we can place each instrument correctly in the mix. EQ is subjective and can be influenced greatly by the style of music that you are mixing.

We're going to run through the EQ features that Cubase AI has to offer, but feel free to experiment and try out the different presets on your mix.



1. Solo the Drums track and click the “Edit Instrument Channel Settings” button.



2. This will open the Channel Settings window, where you can e.g. make EQ settings. Make sure you have a section of music looping so that you can hear the EQ changes you are making.

- There are four bands of EQ on each track.

3. In the Equalizers section, click the “EQ Band Active” button for each of the EQs to turn them on. You can also click in the EQ curve area to turn on an EQ.

Click in the EQ curve area to turn on an EQ.



Click the “EQ Band Active” button to turn on an EQ.

4. Click and move the EQ point up, down, right or left. Moving the EQ point up or down raises or lowers the gain of the EQ. The gain makes that particular EQ louder or softer. The “EQ Band Gain” at the bottom of the EQ window gives you the value of gain.

If you hold down [Ctrl]/[Command], you can restrict the movement of the EQ to just up and down.



Move the EQ up or down to raise or lower the gain.

“EQ Band Gain” amount

5. Moving the EQ point right or left changes the frequency of the EQ. The “EQ Band Freq” setting at the bottom of the EQ window gives you the value of the frequency.

If you hold down [Alt]/[Option], you can restrict the movement of the EQ to just right or left.

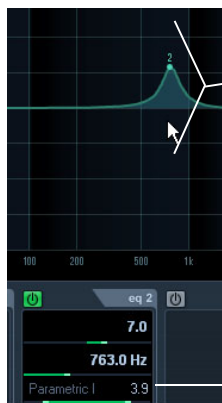


Move the EQ left or right to change the frequency.

“EQ Band Freq” amount



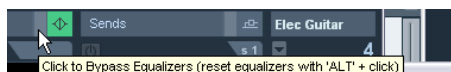
6. Holding down [Shift] while moving the EQ point up or down changes the quality (Q) of the EQ. Many people refer to this as the width of the EQ. The “EQ Band Q” setting at the bottom of the EQ window gives you the value of the quality.



Moving the EQ up or down while holding down [Shift] changes the Q.

“EQ Band Q” amount

7. You can bypass the EQs by clicking on the “Bypass Equalizers” button. If you [Alt]/[Option]-click, you can reset the EQ. A dialog window will open to confirm if you are sure you want to reset the EQs. If you are sure, click “Yes”.



Experiment with the EQs on all your tracks in this tutorial. A good tip when using EQ is that it's usually better to take away EQ (lower the gain) than to add it.

⚠ We've made a whole bunch of EQ changes to this tutorial. Listen and see the changes by loading the project “Mixing 5” found in the “Tutorial 4” folder.

Now let's move on to effects.

## Audio effects

⚠ Load the project called “Mixing 6” found in the “Tutorial 4” folder.

Now let's start using some effects. We can add effects by inserting the effect directly on a track or we can create an FX channel and use the auxiliary sends of each track to send to that FX channel.

## Insert effects

1. Make sure the Mixer is open.

You can open the Mixer from the Devices menu or by pressing [F3].

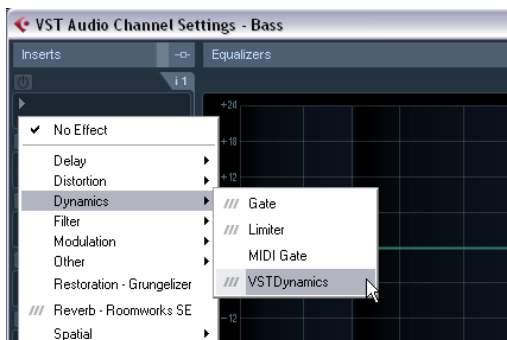
2. Begin playback and loop or cycle a section of music so that you can hear everything.

The tutorial project has its locators and cycle already set for this. Feel free to change this if you like.

3. Click on the “Edit Audio Channels Settings” button on the Bass track to open the VST Audio Channel Settings window.



4. Let's add compression to the Bass track to smooth it out. Click on the “Select Insert Type 1” slot and choose “VSTDynamics” from the Dynamics submenu.



5. Make changes to the settings in the Compressor section. At the end of this section, you can load the next tutorial that will contain all of the changes we have made.

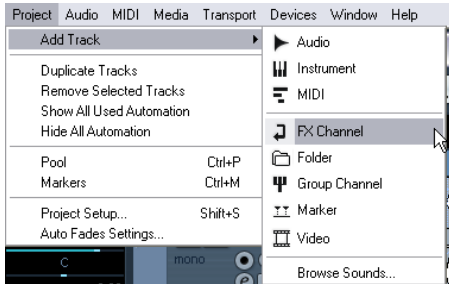




## FX channels

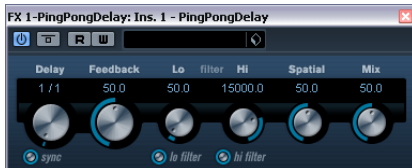
Now let's show you how to create and use FX channels.

1. Close the Mixer and choose "FX Channel" from the Add Track submenu of the Project menu.

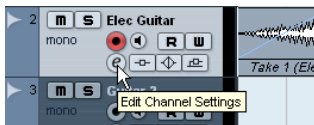


2. Choose "Stereo" for "Configuration", select the "PingPongDelay" effect and click OK.

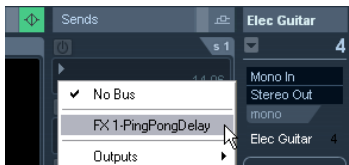
3. We are going to put delay on the "Elec Guitar" track. Experiment until you find the best effect settings. The included effects are described in detail in the separate pdf document Plug-In Reference.



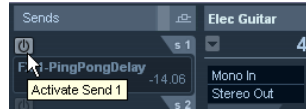
4. With the delay set, click the "Edit Channels Settings" button of the "Elec Guitar" track.



5. Select "FX 1-PingPongDelay" from the "Select Send Destination" pop-up menu.



6. Click the "Activate Send 1" button to turn on the send. This will allow you to send the guitar to the "PingPongDelay" effect.



7. Move the slider to the right to raise the level of the send to the "PingPongDelay" effect. You will begin to hear the guitar being delayed. Clicking the "S" (solo) button on the track will allow you to hear this more clearly.



8. The great thing about FX Channels is that the channel looks and feels just like a regular audio channel. When you set an EQ for an FX Channel, only this effect will be changed by the EQ. In our case changing the EQ on the "FX 1-PingPongDelay" FX channel will only change the EQ of the delay.





## About automation

Automation allows us to make objects such as faders and knobs move by themselves. This is very handy in that we can tell Cubase AI to make changes over a period of time and those changes will be remembered and will occur again without our attention.

⚠ Load the project called “Mixing 7” found in the “Tutorial 4” folder.

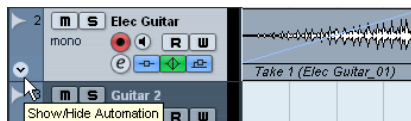
1. We created a fade-in on the “Elec Guitar” track earlier. Let’s remove the fade on this audio event and create some automation instead. Zoom in so that you can see the first audio event more clearly.



2. Select the event and choose “Remove Fades” from the Audio menu.

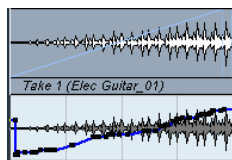
3. Click the “Show/Hide Automation” button at the far left of the track.

You may need to hover your mouse over the far left bottom area until you see the button appear as this is only shown when you need it.

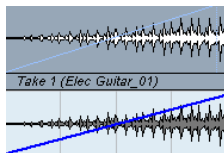


4. Select the Pencil tool.

5. In the subtrack that appears below the audio event use the Pencil tool to draw in automation so that it resembles a fade in.

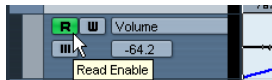


6. You can also use the “Line” tool to draw in automation in a straight line. Perfect for fade in automation.



7. Listen to the fade in automation we created.

- You may have noticed that when we used the Pencil tool to place in automation, the “R” button (Read Enable) for the track became highlighted. This means that the automation on this track is being read or played back. You can turn this off and the automation will not be read. In our case we drew in volume automation, and so in turning it off the volume will not fade in but stay at one level.



There are so many examples to show when it comes to automation. For example we could have automated our effects or our send levels. We could have even automated objects while Cubase AI was playing back. The automation can be placed into write mode and moving almost any thing will create automation that we can edit for fine tuning later!

Make sure you read the chapter “Automation” in the Operation Manual to fully realize how exciting automation can be.



# Exporting

Now that we have our project mixed we will want to export it so that we can import it into another program such as a CD burning application.

⚠ Load the project “Mixing 8” found in the “Tutorial 4” folder.

▪ Before we can export our mix we need to tell Cubase AI how many bars to export. We accomplish this by setting the locators.

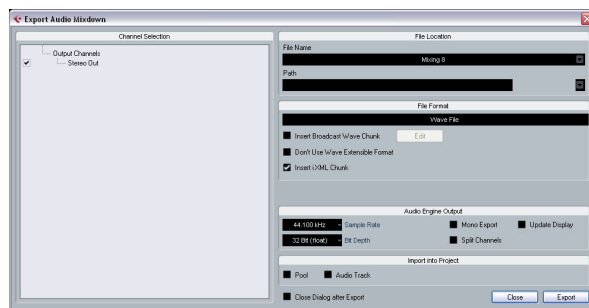
1. On the Transport panel, make sure that the left and right locators are set to bar 1 and 57, respectively. This will ensure we have all the music for export.



2. Open the File menu, and on the Export submenu select “Audio Mixdown...”.

3. The “Export Audio Mixdown” dialog opens.

This dialog is described in detail in the chapter “Export Audio Mixdown” in the Operation Manual.



4. “Name” is for naming the file for export. Let’s name our’s “Mixing Mixdown”.

5. The “Path” is where you wish to save the exported file on your computer. Open the “Path Options” pop-up menu to the right of the Path field and select “Choose...” to navigate to the folder you wish to save to. For convenience there is the option “Use Project Audio Folder” which will store the exported file in your project’s audio folder. This is

one of the best places to keep it so it won’t accidentally become erased or lost. Make sure “Use Project Audio Folder” is activated for this export.

6. Normally you’ll want to save your exported file as a “Wave File” under “File Format”. This of course chiefly depends on what file format the other application such as a CD burning program requires.

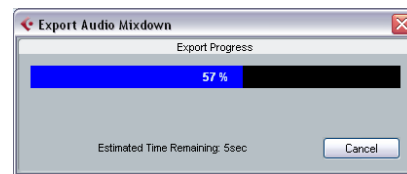
7. In the Channel Selection section choose the main output channel “Stereo Out” for export.

The exported file will be generated through the main stereo output that you can see in the Mixer.

8. In the Audio Engine Output section, choose the “Sample Rate” and “Bit Depth” that will be required for your export. 44.100 kHz and 16 bit are common for CD burning.

9. Activate the “Pool” and “Audio Track” options at the bottom of the dialog, as these will import the audio back into Cubase AI after you export it and automatically create an audio track. If you activate the “Close dialog after Export” option, the “Export Audio Mixdown” window will also close after export.

10. When you are done making all the settings, click the Export button.



11. You will now see the exported stereo mix on a new stereo track.



12. You can check to see if the audio mixdown sounds the way you want it by soloing the mixdown track.

⚠ Load the project called “Mixing 9” found in the “Tutorial 4” folder to see the results of this export.



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